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Understanding Household Responses to Food Insecurity and Famine Conditions in Rural Somaliland

By

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ABSTRACT

This thesis examines the responses adopted by rural households in Somaliland to changes in their resource endowments and market exchange during the 1988-1992 food crisis. It tests whether there is a predictable sequence of responses adopted by rural households when faced with food insecurity and famine conditions and examines the implications of this for famine early warning and famine response.

The research is based on fieldwork conducted in rural Somaliland in 1992. A sample of 100 households interviewed just before the outbreak of the war in 1987 were re-sampled, allowing comparisons to be made before and after the crisis. These households experienced food insecurity and famine conditions caused by the 1988 war which displaced almost the entire population and disrupted markets, trade and food production.

The thesis reviews droughts and famines from the late 19th century to the present and investigates their causes and impacts on rural households. It also examines both the adaptive and coping strategies developed by the households in response to these crises. These strategies have largely been successful in mitigating the effects of droughts and famines and preventing widespread starvation in most food crises. It is argued that droughts and famines in post-colonial periods were characterised by a lack of public intervention and a failure of policies which contributed to the long-term vulnerability of the households.

The hypothesis that there is a predictable pattern of responses adopted by rural households is rejected on the basis of empirical evidence presented in this thesis.

The implication of this is that monitoring response sequences cannot generally be used to provide indicators of the level of stress faced by households in crisis situations as they can produce misleading information. It is argued that greater understanding of market conditions and household resource allocation is required if household responses are to be used for famine early warning and famine intervention.

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CHAPTER 1. THE RESEARCH PROBLEM

1.1 Introduction

Famine has become endemic in the Horn of Africa region which has suffered one of the most severe and sustained famines in modern times. For the last two decades, at least one major famine has hit the region every five years. Hundreds of thousands of people have been killed and millions displaced as a result of these famines. For instance, between 1983 to 1984 more than two million people are estimated to have been killed by famine in Ethiopia and Sudan. The latest famine in Somalia from 1991 to 1993 alone killed more than half a million people out of a population of only 7 million. Moreover, the recurrence of famines made hundreds of thousands of people more vulnerable and less able to survive future food crises and famines. Vulnerability has increased to such a level that moderate droughts which people used to cope with in the past are now causing widespread starvation and deaths.

Whilst droughts undoubtedly contribute to food insecurity and famine, conflict plays a major role in the persistence of famine in the region. The recurrence of famine and the continuing conflict in the region are causally linked. The root cause of food insecurity results from disruptions and destructions caused by conflicts. Conflict increases vulnerability to famine through the destruction and

dislocation of markets and infrastructure; the displacement of populations; and disruption of coping strategies (Duffield: 1990). This is particularly so in Somalia and Somaliland where several years of war have caused total destruction of infrastructure and resulted in substantial displacement of the population.

1.2 Statement of the Problem

Despite the recurrence of famine in the region, there is still a lack of understanding as to how rural households, which form the bulk of the population, respond to food insecurity and famines. A growing literature on household coping strategies in Africa has not helped either in understanding how rural households respond to food crisis and how they manage their resources in crisis situations. Many of the household response studies are based on simplistic generalizations and poorly conceptualized models.

When faced with declining entitlements to food, rural households plan strategically to mitigate the effects on their livelihoods. They do not await starvation passively, but they actively engage in a sequence of actions aimed at minimising the risks they face (Frankenberger 1990). They adopt a wide range of responses, involving re-arrangement of the mix of their resources, changes in their food consumption, liquidation of their assets and so on. What

type or sequence of responses are taken up depends on the households' resource endowments, local market conditions and the exact sequence of events leading to famine conditions (Corbett 1988). These factors determine options open to each household and the viability of each action.

Understanding household responses is important for three reasons. Firstly, it is argued that the information on household behavioral responses can be used in predicting famines. This means if household responses can be fully understood, they could form part of the famine early warning systems (EWS) set up throughout much of Africa since the 1973/74 droughts and famines in Sahel and Horn of Africa. The disappointing results of EWS to provide accurate and timely information on impending food crises have led many to suggest the use of household responses as the basis for EWS.

Secondly, understanding household responses can help in providing relief and responding to crises. By knowing how households are reacting to the crisis and what actions they are taking, interventions could be made more relevant by supporting their coping mechanisms. Failure to understand what affected households are trying to do and why they are doing it has led to the failure of many relief programmes (Corbett 1988).

Thirdly, understanding household responses can also throw light on the issue

of why some households cope with famine, while others starve in a given situation. Again studying responses of different groups over time under different circumstances can give insight into this problem. A relevant example here is the recent famine in Somalia where some of the coping mechanisms of certain communities collapsed while others managed to survive. Thus, there is also the need to know why the coping mechanisms of certain groups collapse earlier than those of others. Much has been written on famines, but very little has been done by way of empirical research which addresses these issues.

Although most of the famines in Africa are now caused mainly by wars, the existing household response studies are mainly based on food shortages and famines that were caused primarily by other factors such as droughts. Although the ultimate effects of food shortages and famines, whether they are caused by wars or droughts, on rural households may be the same, the process and sequence of events which lead to the famines are different, causing the households to respond differently. One major difference between the two types of famines is the time scale involved in the process of famine. War famines, for instance, typically have a much shorter time scale than those caused by droughts. This essentially means households will have less time to respond to conditions that may be changing rapidly. In conflict situations entire markets may be destroyed overnight; household assets looted; and people forced to migrate from their farms and villages.

The lack of understanding at the conceptual level of the responses of rural households is confounded by a lack of detailed empirical study. Despite the existence of a number of case studies on household coping strategies in famine conditions, reliable empirical evidence is not yet available. Reflecting this view, Corbett (1988: 1101) points out that:

> it should be noted that detailed empirical evidence is much rarer. Where empirical evidence is available, there are often severe limitations on the sample size ... alternatively, data collection may not have started early enough to enable comparisons to be made between what households "normally" do and what they do during famine conditions.

Moreover, the existing case studies have tended to define general patterns of household responses, rather than trying to understand factors underlying them.

These problems provide both the theoretical and empirical focus of this research. It is the first empirical research on household food insecurity problems in Somaliland where famine prevention ranks top on the country's priorities. It is expected that the findings of this research will contribute towards better understanding of what households do when they are faced with declining access to food, why they do it and the implications for famine prevention.

Although the unit of analysis in this research is the rural household, inter-household and intra-household issues which are important in understanding household responses are also considered.

1.3 Objectives

The main objective of the research is to study the responses of rural households during food insecurity and famine conditions. The questions that concern this thesis are: what determines the sequence of household responses? Is there a predictable pattern of responses followed by rural households when faced with declining entitlements to food? How do rural households manage their resources during crises? What are the implications for famine early warning system and famine relief?

Specific objectives of the research are:

a) To study the responses of rural households to changes in their entitlements.

b) To examine the determinants of the sequence of household responses.

c) To explore the implications for famine early warning and famine relief.

1.4 Hypotheses

In order to answer the questions raised and to achieve the stated objectives, research propositions should be stated as clear hypotheses. The central hypotheses of this study are:

1. There is a predictable sequence of responses adopted by rural households faced with food insecurity and famine conditions.

2. A greater understanding of household resources and the effects of changes in market conditions on their allocation is necessary for interpreting households responses in famine early warning.

These hypotheses are tested empirically using survey data from rural Somaliland. The first hypothesis is postulated to test the proposition that there is a predictable pattern of household responses in food crises and famine situations. It has been argued that households faced with food crisis go through a predictable sequence of responses as stress increases. These range from reduction in consumption through to the liquidation of assets. For a typical

household, these may include selling small stock, cows, oxen and possessions. Many factors such as market conditions, resource endowments, timing and severity of the food crisis and options available to the households influence which responses are adopted and in what sequence. On *a priori* the proposition that there is a predictable sequence of responses adopted by rural households is maintained.

The second hypothesis is concerned with the importance of market conditions and household resource management during crisis. It is argued that understanding how rural households respond and why they respond in the way they do, requires greater understanding of the prevailing market conditions and the structure and management of household resources. In the literature on household responses, two criteria are claimed to determine the sequence of household responses. These are the "reversibility" of the responses and the "commitment of the domestic resources". This hypothesis rejects these criteria as insufficient in explaining household responses in times of crisis.

1.5 Organisation of the Thesis

Chapter 2 provides an overview of the literature on famines, famine early warning and household responses to food insecurity and famine conditions. It firstly reviews various theories of famines, including Sen's entitlement theory.

This is followed by a review of famine early warning systems. Finally, both the theoretical and empirical literature on household responses and coping strategies are reviewed, identifying problems at the conceptual level.

Chapter 3 sets out the research methodology used in the thesis. It explains both primary and secondary data collected during field work and methods used in data collection exercise. It describes sampling procedures, sample size, questionnaire design and the study area in detail. This is followed by a description of detailed interviews with key informants on past and present droughts and famines, and the gathering of price and market information. Sources and accuracy of the secondary data used are also explained. Moreover, the analytical procedures are discussed. This is carried out by reviewing alternative techniques used for modelling household responses. The relative merits of using different models are also considered.

Description of past droughts and famines in Somaliland are presented in Chapter 4. Using information from various sources, including oral accounts, colonial publications, and unpublished material, droughts and famines in the last century are described. The chapter focuses on the causes and the impact of droughts and famines, explaining how rural households responded to these crises. Special emphasis is given to local people's perspectives on these crises.

Chapters 5 and 6 are concerned with the rural economy before and after the 1988 war. Chapter 5 describes the farming systems and the structure of the rural economy before the outbreak of the war. It examines livestock and crop production systems, the effects of government pricing policy on farming and agricultural markets and the role of the cultivation of *Qat* in the rural economy. The impact of the government development programme on the agriculture in the area is also assessed. Chapter 6 looks at the effects of the war on the rural economy. It specifically looks at the impact of the war on markets, incomes and assets of rural households and the overall livelihoods of people in the area. It analyses the social and health crisis that resulted from the war.

Chapter 7 provides a detailed analysis of the responses of rural households in Somaliland between 1988-92. In this analysis, the concept of the sequential uptake of responses advanced in the literature is rejected on the basis of the empirical evidence presented. The determinants of household responses are analyzed using ranking and linear programming models.

In Chapter 8 the implications for famine early warning and famine relief are explored. The use of household responses in famine early warning is examined, considering both the limitations and the potential. The possibilities of predicting household responses to changes in their entitlements are also examined. Using the linear programming model set up in Chapter 7, household responses under

different scenarios are projected. The main objective here is not just to identify the sequence of responses, but more importantly to ensure that the economic rationale of the responses are fully understood.

Conclusions and a summary of key findings are presented in Chapter 9. Implications for policy and future research are also discussed.

CHAPTER 2. REVIEW OF THE LITERATURE

2.1 Introduction

This chapter provides an overview of the literature. The first section reviews theories of famine and the debate surrounding Sen's work on entitlement approaches to famine analysis. The following section reviews literature on famine early warning systems in Africa and the effectiveness of the systems in providing timely information on impending crises are reviewed. The final section reviews both theoretical and empirical literature on household responses and coping strategies, identifying the conceptual limitations of the model used to explain responses.

2.2 Theories of Famine

In recorded history, famines have periodically affected societies throughout the world. The earliest recorded famines hit ancient Egypt in the fourth millennium BC, whereas the most recent famines occurred in the Horn of Africa in the late 1980s and early 1990s. However, despite its long history, famine still remains a misunderstood phenomenon (Ghose 1989).

There is an ongoing debate on the nature and causes of famine. Until recently

the standard explanation of famine had been in terms of "food availability decline" (FAD) which is based on the concept of a declining aggregate food supply over time. The FAD approach has its origins in Malthus's pessimism based on the expectation of falling food output per head. Malthus argued that agricultural production could only grow arithmetically, while the population could grow geometrically and thus human beings would eventually breed themselves into starvation (Malthus 1798, 1800). The current theories of a "population bomb" as a cause of food crisis and growing environmental concern about the sustainability of natural resources have added impetus to Malthusian pessimism (Gershon 1990).

Although Malthus's original hypotheses have been proven wrong by history, contemporary neo-Malthusians claim that the cause of famine can still be explained in terms of population growth and food shortage (Devereux 1993). Related to this issue is the concept of "carrying capacity" which suggests environmental deterioration and desertification as inevitable consequences.

The FAD approach to famine was first critically examined and then dismissed by Sen (1981) in his seminal work on famines. Sen argued that the FAD approach is not only an insufficient explanation but often just plain wrong. Sen analyzed four major famines in Bengal, Ethiopia, Sahel and Bangladesh and showed that only in Sahel had the aggregate food supply declined. In the other

three cases there was an "entitlement failure" for certain sections of the population and there was no significant decline in aggregate food supply (ibid). Based on his analysis, Sen maintained that:

> A food-centred view tells us rather little about starvation. It does not tell us how starvation can develop even without a decline in food availability. Nor does it tell us - even when starvation is accompanied by a fall in food supply -- why some groups had to starve while others could feed themselves. The overall food picture is too remote an economic variable to tell us much about starvation.

Sen explained famines in terms of "entitlement failures" and argued that it is the failure of some sections of the population to command adequate food for survival that directly relates to their starvation rather than some aggregate statistics about food supply. He noted that, in an exchange economy, factors other than food supply are involved and that markets determine people's ability to survive. The "entitlement failure" results from either a fall of a person's endowment (assets) or from an unfavourable shift in his exchange entitlement (e.g. rise in food prices, fall in wages).

Sen identified four components of entitlements in private ownership market economies: trade based entitlement; production-based entitlement; own-labour entitlement; and inheritance and transfer entitlement. An individual's entitlement collapses when *endowments* contract (i.e. crops fail, livestock die)

or *exchange entitlements* shift unfavourably (terms of trade between livestock and food falls, food prices rise). The unit of analysis in the entitlement approach is the occupation groups. "The logic of the entitlement approach indicates that the analysis must *inter alia* concentrate on occupation groups" (Dreze and Sen 1989: 31).

The entitlement approach to famine has been extensively examined, criticized and extended in the literature. One such criticism has been that what the entitlement theory says is self-evident and well known. Mitra (1982) notes in his early review of *Poverty and Famines* that:

> Our great-grandmothers, who ... were altogether innocent of the notion of 'non-negative orthant of n-dimensional real space', knew about these common factors underlying famines. The poor have little assets or incomes; since the exchange value of these assets and incomes go down further in the years of famine, poor people starve and occasionally die. Amartya Sen, I am afraid, has not said anything beyond what our great-grandmothers were already aware of; he has taken ten chapters, four appendices and more than 200 pages to say this.

In another review, Srinivasm (1983) also argued that: the "entitlement approach" is a fancy name for elementary ideas fairly well understood by economists. However, much of the criticism labelled against it has been concerned with defending the "FAD approach". The most forceful proponent

of this approach has been Bowbrick (1986, 1987), who argued in his paper, *"How Professor Sen's Theory Can Cause Famines"* presented at the 1985 Annual Conference of the Agricultural Economics Society, that Sen's entitlement approach is more likely to cause famines than to cure them. The essence of Bowbrick's argument is that aggregate food availability is central to understanding the causes of famines. He argued that Sen's entitlement theory was based on unreliable and inaccurate statistics.

The limitation of the FAD approach to famine analysis is that it is neither necessary nor sufficient for famines to occur. It is not sufficient because local food shortages can be redressed by purchasing or importing from surplus regions. FAD is not necessary because famines can occur without a fall in food availability. A further limitation of FAD is that it does not explain why certain groups suffer more than others in famines.

The most important feature of the entitlement theory, on the other hand, is that it shifts the focus from the conventional supply-side analysis to the access of food by individuals or groups within society (Devereux 1993). Moreover, it allows the analysis of famines that occur in "boom" or "slump" periods. Sen described the Great Famine in Bengal as a "boom famine" in which there was no food shortage but the exchange entitlement of agricultural labourers collapsed.

While Sen's analysis is very useful in explaining the causes of entitlement failure it concentrates exclusively on production and exchange failures or the demand-side explanations and does not explain the role of assets in famine vulnerability. Devereux (1988: 282) has argued that no single theory explains every aspect of all famines and, therefore "the "FAD v entitlement" debate is both sterile and redundant." In his view what is needed is an understanding of the role of both supply and demand factors as proximate causes and not an exclusive concentration on the demand-side explanations. Recognizing this limitation, Swift (1989) has extended the entitlement theory by analyzing the role of assets and claims on other households and government in determining household vulnerability to famine. He contends that households survive crisis by transforming assets directly into consumption or production inputs and their ability to survive collapses only when these assets and claims are exhausted. This is useful in explaining how vulnerability accumulates over time and why one year's poor harvest does not necessarily lead to food crisis and famine. In this model, assets create a buffer against entitlement failure. Thus, household vulnerability is a function of both immediate entitlement failure and the extent to which existing buffers have been depleted (Maxwell and Frankenberger 1992).

The entitlement theory has also been criticised for failing to recognize the role of conflict in famine analysis, given the fact that most of the current famines

are caused by wars. Swift (1989: 10) argued that:

> Sen's work treats *war and civil disturbance* as external to the model. Yet clearly civil war and other major disturbances are crucial to understanding vulnerability and famine.

The issue of conflict is particularly important in understanding contemporary famines in Africa. Most of the major famines in Africa for the last two decades were caused either directly or indirectly by wars and civil disturbances.

Other criticisms have been levelled against the entitlement theory. For example, de Waal (1989) criticized it for failing to recognise the role of disease in famine deaths. He argued that the entitlement approach considers famine mortality as resulting from starvation rather than excess deaths caused by poor sanitary conditions that exist in relief camps gathered by famine victims. Deaths during famine, he maintains, are therefore caused by outbreaks of disease and not by starvation. Stewart (1982) has also criticised Sen's entitlement approach as being descriptive rather than prescriptive because famine may be caused by the non-arrival of famine relief or what Devereux (1993b) called "relief entitlements failure".

Other writers have also argued that the entitlement approach fails to recognize

the processes that lead to famine (Cutler 1985, Desai 1988, D'Souza 1988, Raikes 1988, Rangasami 1985, Walker 1989). Sen described famine as a "distinct phenomenon" and a particularly virulent form of starvation. This view of famine has been particularly challenged by Rangasami (1985) who argues that starvation is a process that has clearly marked phases and the process is completed with the loss of all the victim's assets. Our perceptions of famine relate only to the terminal phase and not the entire process (ibid).

A definition of famine which takes into account the processes that lead to its development has been proposed by Cutler (1985):

> Famine is an abnormal event, characterised by a breakdown in social relations giving rise to epidemic starvation and excess mortality. It is caused initially by a severe disruption in normal economic activity ... which leads to expectations of future scarcities of food among producers, traders and consumers. This in turn leads to modes of social behaviour such as asset sales, hoarding, speculation and the erosion of traditional social bonds which themselves contribute to the development of famine conditions.

However, Cutler's definition does not explain why excess mortality is necessary for defining famine. Excess mortality is not considered to be necessary for famines to occur. A definition that describes famine as a process rather than an event and does not include mortality as a defining component is given by Walker (1989: 6).

> Famine is a socio-economic process which causes the accelerated destitution of the most vulnerable, marginal and least powerful groups in a community, to a point where they can no longer, as a group, maintain a sustainable livelihood.

The famine process usually starts with an exogenous shock to an economy such as drought or war. This causes disruption to the food and non-food production system which feeds into the rest of the economic system through the market. Whether that develops into a full scale famine depends on government policy (e.g the existence of contingency plans and famine preparedness), people's coping strategies and how markets perform. Markets are particularly central to the process of famine by determining the relationship between food and non-food production and the distribution of food between people and over time (Ravallion: 1987).

The description of famine as a series of processes is useful in recognizing the existence of a period of food insecurity and impoverishment which precedes the failure of entitlements, and has important implications for its prevention and relief. The type of indicators used in famine early warning would, for example, depend upon, among other things, the stage of famine. In the early stages of famine, indicators of vulnerability such as asset holdings, employment opportunities, food prices and wages might provide useful information as to who is vulnerable and food insecure, while the nutritional status of the

individual may be used in identifying those at increased risk of dying at later stages of famine. Similarly, the choice of intervention method would depend on the stage of the process and market performance. For example, the entitlement protection intervention aimed at helping the vulnerable to preserve their vital assets may only be feasible during the early stages of famine before destitution and distress migration, whereas direct feeding is suitable in the later stage when people gather in relief camps.

2.3 Famine Early Warning

The famine early warning system is not new. The idea goes back to nineteenth century British India and the formulation of Indian Famine Code or Scarcity Manuals which contained a set of detailed indicators aimed at predicting impending famines and contingency plans for providing relief measures. In Africa, the first EW systems started in the early 1970s, though they proliferated after the 1974/5 drought and famine in Sahel and the Horn of Africa. What actually constitutes early warning varies from one system to the other, but all early warning systems collect data on rainfall, agricultural outputs, nutrition and more recently on socio-economic aspects (Davies 1991). However, most early warning systems concentrate on food availability indicators. Aggregate food outputs are predicted employing a "high tech" approach which involves the use of satellite technology and remote sensing.

The shift of emphasis, in explaining famine, away from food supply explanations to better understanding of entitlements at the conceptual level has not been reflected in famine early warning (Cutler 1985). Because of the donors' emphasis on "objective indicators", supply oriented indicators are still widely used. A common method of using agricultural data for early warning purposes developed by the FAO is to construct a food balance sheet. This estimates a 12-month food balance sheet of domestic food production, opening stocks and imports; and domestic consumption, exports and closing stocks (FAO 1990). Apart from the conceptual limitations of being based on the concept of food availability per capita, food balance sheet analysis produces estimates which may be grossly misleading (Cutler 1985). Walker (1989: 84) argues that:

> Their [food balance sheets] errors are often larger than the figures they are trying to predict, even when they are calculated according to the rules laid out.

In addition, the remote sensing technique which the food balance sheet relies on for crop area estimates is known to confuse different types of vegetation. Walker (1989) notes that the technique does not distinguish between the images of native vegetation and crops in smallholder areas where farms are surrounded by vegetation.

The limits of food supply-oriented information are summed up by McIntire (1987: 291):

> In thinking food crisis in Africa ... it seems that observers have fallen into a fairly simple fallacy ... [that] famines are produced by crop failure in one season; crop failure in one season is (necessarily) sudden; therefore, if such failures could be predicted then it would be possible to prevent famines, by timely expedition of emergency relief.

Because of the fact that famines largely affect households who grow few or no crops, such as pastoralists then information on production can be seriously misleading (McIntire 1987).

The recognition of the limitations of supply-oriented indicators have led many to recommend the use of market indicators for EW (Cutler 1985, FAO 1990, Ravallion 1989). It is argued that market prices are more sensitive than most other indicators in measuring the magnitude of famine (Hutchinson 1991). They are also all-encompassing (Walker 1989) in the sense that all factors relating to the availability of food can be reflected in market prices (Eldridge et al. 1986). Walker (1989: 94) argues that "price rises reflect many stresses besides poor harvest - speculative hoarding, increased demand from migrants, and increased transport costs because of civil war". However, these indicators have not yet been systematically incorporated into most systems (Hutchinson 1991)

because of difficulties in interpreting market data (de Waal 1988, Walker 1989, FAO 1990).

A further reason, apart from the difficulties associated with interpreting it, why market data has not been used systematically is related to the involvement of affected populations in market exchange. It has been argued that in some areas farmers are "crop or livestock dependent" and when their crops fail or their livestock die during droughts, market prices still remain relatively normal due to the lack of effective demand (Cutler 1985). However, a counter argument against the classification of rural producers into "market dependent" and "non-market dependent" is that it is in the first place artificial because of increasing market involvement by all communities (Seaman and Holt 1980). It is hard to accept the existence of subsistence farmers who are totally "crop dependent" in contemporary African economies. In times of crop failure subsistence farmers become even more dependent on markets by selling their assets such as livestock or by migrating in search of work in order to survive. Even in severe famines, starving peasants desperately engage in petty trading in an attempt to survive (Kumar 1990). In his study of famine in Wollo, Rahmato (1991: 171) observed that "in distress conditions, the peasant gives greater attention to the market as well as making greater use of it".

The link between prediction and response has attracted little attention in famine

literature. For effective famine prevention, EWS should provoke a pre-planned response system. "Without being carefully linked to a defined and mandated response system, the early warning information systems become ends in themselves" rather than effective means of famine prevention (Cutler 1985: 15). The same author (1987) has further argued that improving early warning without commitments of response might be considered as a "red herring" as there is no agreement as to what indicators or level of chosen indicator should be taken as a basis for concrete action.

Famine response often depends on the country's preparedness for famine. A pre-planned set of actions indicating what to do and when, can make the response a great deal more reliable (Dreze and Sen 1989). This means that response would be more systematic. It is when the response is ad hoc that authorities find a justification for their inaction. If a particular warning level is identified by an EW indicator, a number of pre-planned measures could be automatically implemented (Davies et al 1991) "without the need for major new decisions, so that natural bureaucratic inertia operates in favour of pre-planned actions" (Swift and Gray 1989: 52). One of the most important lessons to be learnt from India's successful experience of famine prevention is the vital importance of contingency planning (Dreze 1988). In this, a predetermined plan of action is drawn up and used as a guide for famine and food crisis preparedness.

There are two major shortcomings in our conceptualization of the links between prediction and response. First the concept of famine we have today is based on a mass starvation view and most EWS can be referred to as "mass starvation warning systems". But this is not how the victims perceive it. "Mass starvation is not the threat perceived by the victims. They are concerned about irreversible destitution" (Walker 1989: 143). The concept of famine held by the affected people focuses on destitution. On the whole, victims see famine not as a threat to their lives but to their *way of life* and their primary concern is to preserve their assets so that they can return to their normal way of life after famine (de Waal 1989).

The second shortcoming is that there is no agreement on what constitutes an unacceptable level of an indicator to trigger response. This does not mean setting specific standard levels to say, for instance, that famine is present when food prices reach a certain level, but rather predicting the thresholds at which people fall into food insecurity, destitution and finally starvation. Understanding how individuals and communities feed themselves and survive during crisis can help us identify these thresholds. "There is a threshold of individual and community impoverishment ... at which the ability of households or communities to survive collapses" (Swift 1989: 10). The asset status of individuals and communities determine how fast they reach the threshold. The poorest and low-status groups who have fewest assets and claims may reach the

threshold faster than others (Swift 1989). Walker (1989: 148) notes that "the warning system needs explicit information on when the "point of no return" is reached". This is a "distinct threshold - which may be reached through scarcity, speculation or other reasons - beyond which the ability of one part of the population to feed itself is abruptly removed" (Seaman and Holt 1980: 294).

Placing the focus of famine on destitution and the existence of thresholds, which people reach from one stage of the famine process to the other, also has implications for the type of indicators we choose and the response system. For example, an early warning system aimed at preventing destitution would concentrate on collecting information on market prices of assets and asset status, whereas a warning system aimed at predicting mass starvation would gather information on health and nutrition (de Waal 1989). Similarly a response aimed at preventing destitution would be qualitatively different from a relief aimed at preventing starvation.

In pastoral and agro-pastoral societies monitoring the terms of trade between livestock and grain prices could provide the basis for predicting destitution. An increase in food grain prices is often accompanied by a fall in the price of livestock, and herders are forced to sell more of their animals to buy the increasingly expensive food grain (Ulrich 1991). Animal prices fall sharply during famines for two main reasons. First, increased animal sales flood the

markets. Herders and agro-pastoralists exchange animals for other means of subsistence, mainly grain because it provides a cheaper source of calories. Animal calories cost more than several times the grain calories and pastoralists meet most of their calorie requirements through grain purchase. Given the lower cost of acquiring grain calories, hard times force pastoralists and agro-pastoralists to be more dependent on grains acquired through animal sales (Kumar 1990).

Second, meat is a superior good and its demand falls sharply during famines. This is exacerbated by the loss of weight in animals in drought situations which further reduces the price they can realise in the market (Sen 1981). If the livestock-to-grain terms of trade continue to fall, they reach a level where herders may be forced to liquidate all their livestock to meet subsistence requirements and as a result slide into destitution. Herd depletion can have a devastating consequence on future herd reconstitution. After large scale herd liquidation and deaths, herd reconstitution becomes extremely problematic if not altogether impossible (Watts 1991).

Thus, although it is important to monitor the terms of trade between livestock and food grain and other market indicators as part of an early warning system aimed at predicting destitution, there is still the problem of interpreting market data. It has been argued that market indicators are complex (de Waal 1988) and

difficult to interpret to be used effectively in famine prevention (Walker 1989). This has led some to recommend a greater emphasis on other indicators. But closer examination of the criticism reveals that problems in the interpretation of market data result from lack of understanding, in the first place, of how markets function. Market performance has to be assessed in order to be able to interpret the market price data (Ravallion: 1987). The potential role of market indicators seems to have been underestimated. Both contingency planning and famine relief require a proper understanding of markets and the local economy. If interventions are to be effective, the likely response of markets should be assessed, otherwise the donors and governments would be shooting in the dark.

Greater use of market data together with other socio-economic indicators is useful in predicting famine, but the real challenge is to put them together and decide the level of abnormality at which interventions are triggered. One of the missing links between prediction and response is to do with the interpretation of what is abnormal or unacceptable. What may be an unacceptable level of indicators in one part of a country may be quite normal in another. Therefore further examination of what constitutes abnormality should be the first step in improving the link between prediction and response.

Because of the failure of famine EWS in Africa, Campbell (1990a) has

recommended the use of household responses as an alternative to other types of information currently collected by EWS . This is based on the concept of the sequential uptake of responses by affected households. The idea here is that by monitoring the sequence of responses, early warning systems can identify the level of stress faced by households. This means that responses can be used as indicators for impending food shortages and declining food entitlements.

2.4 Household Responses to Famine

An important weakness of Sen's entitlement approach is that it does not explain the responses of households to changes in their entitlements during food crisis. Nor does it recognize the importance of household responses in mitigating the effects of famines on preserving their livelihoods. However, a growing literature on household coping strategies in Africa places special importance on understanding what rural households do when they are faced with declining entitlements (Campbell 1990b).

Most of these studies on household coping strategies in Africa enumerate responses and identify general patterns. Watts (1983: 434), for instance, studied food crises and famine in northern Nigeria in 1973/74 and suggested that:

> households do not respond arbitrarily to a food crisis for which they are

> in some sense conceptually prepared; rather they do so serially, with respect to the intensity of what one might call famine signals.

He listed ten responses and argued that two critical factors determined the sequence of these responses: the "commitment of domestic resources" involved and the degree of "reversibility" of each response. In his view, households start with responses that involve the smallest commitment of domestic resources and the highest degree of reversibility. This means households prioritise responses in such a way that reversible steps are taken first.

Others (Cutler 1986; de Waal 1987; Patrick and von Braun 1994; Rahmato 1991; Teklu 1992) have also identified sequences of responses based on the concept of sequential uptake of responses. The type of responses observed include: changes in cropping and planting practices; migration in search of employment; dispersed grazing; collection of wild foods; the use of credit; rationing of food consumption; the sale of small stock; the sale of possessions; the sale of productive assets; and distress migration. Although the term "coping strategies" is often used to describe the responses of households, a number of other expressions such as "coping mechanisms", "survival strategies", "response mechanisms" and "behavioral responses" are also used. However, the term "coping" implies that households do cope, although in fact they do not always (Davies et al 1991). Thus, the term "household responses" which implies the

individual actions taken by households is considered neutral.

Some of the literature on traditional coping strategies follows the approach that has become known as "the moral economy approach" advanced by Scott (1976). In this approach, the pre-capitalist communities are viewed as societies in which minimum subsistence is assured to all members and the risk of starvation is insured against collectively. In this system, individuals or households lose their membership and their claims to minimum subsistence if they break customary rules. According to Scott, this may collapse under exceptionally adverse situations such as wars and droughts. These arrangements are designed to cope with food scarcities and other kinds of contingencies. According to this approach, market exchange is only marginal to inter-tribal relations and has no special significance to social survival (Platteau 1988). This is based on the idea that market involvement reduces the moral economy. On the other hand, Popkin (1979) strongly opposed this view and argued that traditional village institutions and norms have neither been motivated nor effective in providing the insurance of subsistence requirements for community members (Platteau 1988). Popkin's argument is based on the view that individual risk minimization or security maximisation do not necessarily have the same effects at village level.

However, Platteau (1988) has dismissed the arguments of the moral economy

versus political economy approach and has put forward a balanced approach that rejects Popkin's suggestion of the absence of traditional insurance systems. According to Platteau the systems may be imperfect, but they are far from absent. As for the moral economy approach the suggestion that market penetration in village communities weakens the collective coping strategies need not be universal or systematic (ibid). On the contrary, there have been many instances where the traditional coping systems have been strengthened or intensified by market penetration.

An important feature of pre-capitalist societies is the absence of exclusive and clear-cut property rights in productive assets. This means that no single individual can claim exclusive right in the use of those assets (ibid). For instance, in many African societies large stocks are clan property rather than private property (Swift 1989). This absence of property rights is not only confined to clan-based communities. In Muslim societies, for example, God is the ultimate owner of all property (Platteau 1988). According to Swift (1989), this throws doubt to the notion of private ownership in Sen's entitlement theory.

Although the literature on household coping strategies has made some contributions to our understanding of what households do when they are faced with food crisis, several criticisms can be levelled against the studies on

household coping strategies. First, the concept of sequential uptake of responses by rural households is based on simplistic generalisations. Households cannot be expected to follow a particular sequence of actions as some of the factors that determine their responses are exogenous to household decision-making. Which responses they adopt first or last would depend on a multitude of factors, including local market conditions and household resource endowments. The factors determine options open to the household and their viability. Moreover, in this concept of sequencing household responses some assets are always assumed to be less important than others. For instance, sheep and goats are assumed to be less important and, therefore, more likely to be disposed of earlier than other animals. Reflecting this view, Cutler (1985: 43) argues that:

> there was a tendency for goats to be sold off first, as relatively unimportant assets, while cattle would be kept for as long as there was water and pasture to support them. Oxen would be sold off only as a last resort, as these animals are needed for ploughing and are therefore vital to crop production.

However, a lack of empirical evidence for this view is underlined by this same author (1985: 51) who, on reflection, shows that his data does not support the concept he wishes to propose.

> It is interesting to note that a previous hypothesis ... arguing that

> relatively less important animals such as sheep and goats will be sold-off first does not seem to be borne out by the data ... It is in fact more common for oxen to sold off before other animals ... It seems, therefore, that it is *impossible to generalise* about the exact pattern of livestock sales prior to famine migration (italics added).

He (1985: 51) further adds that households may sell their cattle earlier and keep "hardy goats which would be more likely to survive the drought and provide a nucleus for the rebuilding of household assets afterwards".

Secondly, the notion of "reversibility" as determining the sequence of responses is not a useful concept in understanding household responses. This concept is based on an arbitrary classification of individual responses into reversible and irreversible actions. In the case of assets, the classification is simply based on their lumpiness, thus the disposal of, for instance, small animals is considered to be easily reversible compared to, say, the disposal of cattle, which is considered to be irreversible or least likely to be reversed.

Third, the literature on household coping strategies does not cover household responses in conflict situations. Despite the fact that most of the contemporary food crisis situations in Africa are related to conflict, most of the studies concentrate on food crisis situations caused by other factors such as droughts.

Finally, most of the studies of household coping strategies are based on one year crises, rather than the processes that lead to crises or comparisons of crisis and normal years. Moreover, they have tended to define general patterns of household responses, rather than trying to understand the factors underlying them.

2.5 Conclusion

This chapter provides a review of literature on famine theories, famine early warning and household coping strategies. Although the entitlement approach's contribution to analyzing and understanding famines is recognized, several important limitations are identified. Firstly, it is argued that it concentrates exclusively on production and exchange failures and does not explain the role of assets and claims in famine vulnerability. Secondly, the entitlement approach is criticised for failing to recognize the role of conflicts in famine analysis. Thirdly, by describing famine as a "distinct phenomenon", entitlement theory is criticised for failing to understand the processes that lead to famine. A further limitation of the entitlement theory is that it considers famine mortality as resulting from starvation rather than excess deaths caused by disease and poor sanitary conditions.

The review of early warning literature highlights shortcomings in the

conceptualization of links between prediction and response and the agreement on the levels of indicators required to trigger interventions. It is argued that a further examination of what constitutes abnormality is required in order to improve the link between prediction and response.

Finally, most of the household response studies reviewed here are based on poorly conceptualized models and generalisations, suggesting particular patterns of response sequences. These are criticised for failing to understand the underlying factors of household responses. Other limitations of the literature on household coping strategies include the lack of understanding of household responses in conflict situations and a concentration on crisis periods rather than the whole process that leads to crises, thus making comparisons between crisis and normal years.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research methodology involved in data collection and analytical models. It describes the field work conducted in Somaliland, explaining the methods of sample selection, sampling procedure, sample size and the study area. It also describes interviews with key informants, including elders and tribal leaders in the villages that were surveyed. The collection of market information and secondary data is also discussed. Finally, the choice of analytical techniques used in the thesis is also explained.

3.2 Data Collection

The collection of data was based on field work conducted in rural Somaliland in 1992, involving a formal sample survey as well as case studies and interviews with elders and key informants. Information on food and livestock markets and trade was also gathered during the field work. In addition, background information on food security and famine early warning in the region was obtained from the Inter-Governmental Authority on Drought and Desertification (IGADD) in Djibouti and Relief and Rehabilitation Commission in Ethiopia.

3.2.1 Study Area

The Gabiley district in the north-west region of Somaliland was chosen as the site for the field work (see map on Appendix 3.1). This is one of four districts in the north-west region of Somaliland and one of the main agricultural districts in the country. The three villages selected for the survey - Galooley, Agamso and Shabeelle - lie between the district town Gabiley and Arabsiyo. Some of the settlements in Galooley and Shabeelle are adjacent to the outskirts of Gabiley town. The area is about 45 kilometres west of Hargeisa, the capital of Somaliland.

Rural households in the area practise a system of mixed farming in which livestock plays an important economic role. Traditionally, they were nomadic pastoralists whose livelihoods depended on rearing livestock. But they have practised farming since the early 1900s when pastoralists settled in Galoolay village to start cultivation. Sorghum and maize are the main food crops grown in the area, while *Qat* (Catha edulis), a mild stimulant plant widely chewed in the Somali territories, was grown as an important cash crop in the area until 1984 when its cultivation and use was banned by the government. Because it was highly successful and well adapted to the environment, its banning had a serious consequence in the region. It had played such an important role in the rural economy that many of the farmers owned *Qat* fields and were dependent

on it for their income.

A major problem in livestock and crop production in the area is frequent droughts. In every two years out of ten, agro-pastoralists expect crop failure or very low yields. However, over the years they have adopted strategies that minimise the risks of crop failure. These include cultivation of a drought resistant variety of sorghum. Locally known as Elmi Jama, this variety has low yields, but it produces sufficient fodder for the animals even in drought years. This is important because in drought years agro-pastoralists rely more on their livestock to meet their subsistence requirement.

Following the outbreak of the war between the rebel Somali National Movement and government troops in 1988, the agro-pastoralists in the area migrated with the rest of the population into the Haud region in eastern Ethiopia. In this migration, rural households joined the refugee camps established in the area in late 1988 and remained there until January 1991. These households suffered losses of large numbers of animals and other assets which were either looted or destroyed by government troops.

The area was selected because: (a) it was extensively studied during the preparation and implementation of a World Bank funded agricultural development project based in the region prior to the war; (b) there was a

detailed study of the sample households conducted by the researcher and the project consultants in 1987; and (c) it was affected by the war which resulted in 1988-92 food crisis.

3.2.2 Sampling Procedure

The survey was based on the same sample of households which were interviewed in a yield estimation and household survey carried out in the north-west region in 1987. The same households selected in the 1987 survey were re-sampled again in 1992. The survey was based on 100 households selected randomly from a sampling frame of agro-pastoralists in the area. There are several reasons for re-sampling the same households. Firstly, the 1987 survey provides baseline data that can be used to make comparisons and assess the effects of the war and drought on the rural livelihoods. Secondly, the researcher and the enumerators had local knowledge and experience in the area which made it possible to get the full cooperation of the respondents which would not have been possible if a new sample were selected.

Like many other societies in Africa, rural people in Somaliland are often very suspicious and sometimes unwilling to cooperate with anyone they consider an outsider. If the interviewers are foreigners they would normally assume that they are collecting information for relief purposes and would answer questions

accordingly, underestimating their assets and incomes on the assumption that they would be included in the relief distribution list. Similarly, if the interviewers are Somalis who are not from the same area or sub-clan, they would suspect that they are gathering intelligence information for their clans. Depending on how sensitive the questions are, they would either bluntly refuse to answer them or give misleading information. It was, therefore, crucial to gain the full confidence of the respondents. This was very important as the survey contained sensitive questions such as ownership of rifles, which are important assets in the area, and payments of blood money, which are generally confidential but crucial for understanding inter-household transfers and their incomes and expenditures.

A further reason for reselecting the same sample of households was the lack of a complete sampling frame for the area which was required if random sampling were to be used. Constructing a new sampling frame or updating the existing one was not feasible during the study period because the cost involved was prohibitive. Thus, the decision to interview the same households allowed more time and resources to be spent on minimising non-sampling errors, which experience shows are particularly more important in this type of survey. The sample of households chosen is considered to be representative of the three villages, Galooley, Shabeelle and Agamso that were based on the original sampling frame and were, therefore, drawn from the sample. In this survey

greater emphasis was given on in-depth understanding rather than coverage of a large area. However, to the extent that households in other districts have similar characteristics, results of the survey could also be true for other areas.

The size of the sample was considered sufficient given the low variability of the characteristics of households. Although a larger sample might have been preferable, there is a trade-off between sampling and non-sampling errors in choosing the size of the sample. As the sample size increases, sampling errors are reduced but any reduction in sampling errors may be offset by increase in non-sampling errors (Poate and Daplyn 1988).

Although it was not possible to interview directly 27 of the 100 households in the 1987 survey since they were either in the relief camps in Ethiopia or had migrated from the region permanently, the remaining 73 households interviewed were considered a sufficient and representative sample.

I believe that a high degree of accuracy was achieved in gathering detailed information on rural households in this survey for two reasons. Firstly, the researcher's extensive experience in the study area provided an in-depth local knowledge and understanding of the rural situation. The researcher worked in the area for more than seven years and conducted several other studies in the district, including the 1987 survey. Secondly, the local knowledge of the

enumerators who took part in the 1987 survey and had lived in the area since then helped check the accuracy of the individual household responses. Furthermore, various measures, including built-in-checks in the questionnaire were taken to minimize non-sampling errors in the survey and thus obtain accurate results.

Thus, a post-enumeration survey carried out after its completion showed that the responses were accurate and non-sampling errors minimal. This was carried out by the researcher after the completion of the survey to assess the accuracy of the survey data. A sub-sample of twelve households were chosen randomly from the sample and re-interviewed. No discrepancies were found in this post sample enumeration.

3.2.3 Questionnaire Design

A semi-structured questionnaire[1] specifically designed to cover the topics of the study was used. It covered such topics as household composition, assets and livestock ownership from 1988 to 1992, market exchange, and food production and consumption patterns, which all required empirical information. The questionnaire was easy to use and the enumerators were given interview guides

[1] See Appendix 3.2 for the complete questionnaire used in the survey.

that explained the questions. The forms were written in English, but some questions that were thought ambiguous in English were translated into Somali. Previous survey experience in the area shows that interviewing is best carried out in *Qat* sessions. Therefore, where possible, interviews were conducted in *Qat* sessions. The households were very clear about the aim of the study. They gave their responses on the understanding that the results would only be used for research purposes.

3.2.4 Interviews with key informants

Another important part of the data collection exercise was the collection of oral literature on droughts and famines in the country. Using a simple checklist of topics, key informants were interviewed on past droughts and famines in the country.

Village leaders and elders in the survey area were also interviewed on a range of topics, including the impact of the war on their communities, functioning of the moral economy at the community level, and household responses and changes in market exchange.

3.2.5 Secondary Data

The secondary data on market conditions and trade was obtained from various sources, including NGOs such as CARE International and SCF, and local newspapers which produce daily price reports of major commodities and animals in the main markets. The data collected includes: livestock and food prices for 1991-92, export of livestock and volumes of trade in Hargeisa market.

Background information on the food security situation in the region and past famines was provided by IGADD and the Relief and Rehabilitation Commission of Ethiopia. In addition RRC provided price and market information in the eastern region of Hararghe.

3.3 Analytical Methods

A criterion for selecting analytical techniques is whether it can provide a test of the hypothesis and whether accurate data is available for the technique to produce reliable results. This is important because analytical techniques are sometimes applied mechanically without assessing their suitability. Selecting problems and hypotheses that fit to a particular technique, which can be called technique-oriented research, can be misleading. Gibson (1966: 79) argued that:

> Perhaps the most dangerous aspect of "technique-oriented" research is the uncritical and mechanical use of available techniques as a substitute for, rather than an aid in, in thinking.

In this research, analytical methods were used on the basis of the available data and the suitability of the techniques in producing results that can be used to test the research hypothesis. Several analytical methods are used, including linear programming and ranking criterion. A linear programming model is used as the main analytical method in the study. It is used to analyze how rural households manage their resources and how changes in market conditions affect the interrelationships between resources. It is also used in exploring the likely responses of households to changes in their entitlements. The aim of this model is to understand the economic rationale and the underlying factors of household responses and resource allocation in food insecurity and famine situations.

The use of linear programming in economic analysis of rural households has particular advantages. It is more realistic and systematic in dealing with complex interrelationships which arise from households rearranging their mix of resources and activities (Barnard and Nix 1979). Moreover, it is based on the current household resource structures rather than past resource endowments and assumptions about the structure of production, consumption and other variables can be altered to study their impact on the incomes and assets of households.

A further advantage of the linear programming method is that it provides a wealth of information that is necessary for assessing policy impact. This by-product data could provide useful information for interventions. For example, the marginal value product of labour could be used as a guide for setting the wage rate of cash/food for work programmes. Finally, the problem of resource allocation of households can be studied in greater depth.

However, a drawback of the use of linear programming method is the assumption of profit maximisation in the objective function which may not be consistent with household objectives. The farmer or the herder may have other objectives and priorities such as meeting minimum subsistence requirement and risk minimisation. But this can be dealt with by incorporating the other objectives in the model as constraints without the need to use goal programming. Thus, there is nothing inherently wrong with the method to make an allowance for household's many objectives.

A linear programming problem involves maximising (or minimising) a linear objective function subject to linear constraints. It solves formulations allocating scarce resources so as to maximise a predetermined objective (McCarl and Nuthall 1982). It is essentially a procedure for determining the combination of enterprises/activities that is feasible in such a way that a specified objective function is maximised without violating set constraints.

The linear programming model can be expressed mathematically as:

$$Max \quad Z=\sum_{j=1}^{n} C_j X_j$$

$$Subject\ to \quad B_i \geq A_{ij} X_j$$

$$j = 1 \ldots n$$

$$i = 1 \ldots m$$

Where

Z = the total net revenue

X_j = the level of the jth activity

C_j = the gross margin of the jth activity

B_i = the level of the ith constraint

A_{ij} = the amount of the ith constraint used by the jth activity

In addition to linear programming, a ranking model is used to examine the order in which the divestment decisions are made by the households. This is a

ranking ratio similar to the net benefit-investment (N/K) ratio[2] used in project appraisal to rank alternative investment options. The model is chosen because divestment decisions made by rural households are comparable to investment decisions. In both cases the decision criteria involve weighing up both current and future costs and benefits associated with individual decisions. Further details of this model are explained in chapter 7.

3.4 Conclusion

Because of the good quality of the data collected in the survey, the information obtained provides an in-depth understanding of the rural households in the area. This was made possible by the experience and knowledge of the researcher and enumerators in the area, the full cooperation of the households, and the baseline data gathered in the 1987 survey which provided useful information for understanding the processes leading to the food crisis. Interviews with village leaders and community elders and secondary data obtained from various sources inside and outside the country also provided important information on both the current and past food crises in the area.

Furthermore, the quality of the data gathered allows the use of a linear

[2] for details of net benefit-investment ratio see Gittinger (1982)

programming model to examine how households re-allocate their resources in crisis situations and how changes in market conditions affect the interrelationships between their resources.

CHAPTER 4. DROUGHTS AND FAMINES, 1888-1987

4.1 Introduction

This chapter presents a review of the past droughts and famines in Somaliland from the late nineteenth century to 1987, using information from various sources including oral accounts, colonial publications, and unpublished material. Droughts and famines in the twentieth century are divided into two periods: the colonial and post-colonial food crises. This is to contrast their impact, how rural households responded and public interventions. The chapter focuses on the causes, impact and responses of the households to the droughts and famines. Since much of the social history of Somaliland remains unwritten, a substantial part of this chapter is derived from oral sources and the unpublished work of local historians.

4.2 The Great Famine, 1888-92

The great famine was the most severe famine in the region for centuries, affecting most of the countries in the Horn of Africa. It had a devastating impact on the region. An estimated one-third of the entire population is reported to have perished during this famine (Pankhurst 1985). In Somaliland, it is widely remembered as one of the most severe famines.

4.2.1 Causes

The famine was caused by a combination of natural calamities: a major cattle epidemic; crop failure; and an outbreak of locusts and worms. However, the principal trigger was the outbreak of a rinderpest epidemic which first started in Ethiopia but quickly spread to the neighbouring countries. According to Pankhurst (1985: 59), the rinderpest which was new to the region "appeared with unusual virulence and spread like wildfire". The outbreak of the epidemic was caused by the importation of infected cattle by Italian troops during the war with Ethiopia (ibid). It is believed that infected cattle were included among shipments by the Italians at the port of Massawa (Fitzgerald 1994). Pankhurst notes that many people believe the disease was deliberately spread by the Italians by inoculating some animals with the disease.

The deaths of a large number of cattle led to the deterioration of sanitary conditions. The outbreak of cholera and other diseases was also reported during the famine and in many areas it was disease, resulting from the breakdown of sanitary conditions rather than starvation *per se* that caused the large number of human deaths.

The cattle epidemic was accompanied by extremely hot and dry weather in 1888-9 which resulted in widespread crop failures. This crop failure hit the

Hararghe region in particular. This was a traditionally agricultural area which most of the Somali pastoralists were dependent upon for their food grain purchases. A locust invasion which destroyed crops was also reported during the famine. As a result of the crop failures and the cattle epidemic food prices were reported to have gone up sharply. A price increase of one to two hundred times was reported between 1889 and 1890 (ibid). Speculations and widespread hoarding were partly responsible for the price increases. Large scale deaths of draught animals and the expectation of future shortages fuelled the speculations.

The last year of the famine was particularly difficult for the Somalis in the Haud region. The troops of the Ethiopian emperor Menelik raided the region and seized large numbers of animals that had survived the famine. Samatar (quoted in Samatar 1989) puts the estimates of those animals confiscated at 100,000 cattle, 200,000 camels and 600,000 sheep and goats. Pankhurst also reports 10,000 cattle seized in the first part of 1892 by the governor of Harar, Ras Makonnen, from the Somalis in the Ogaden region. These raids continued until 1897 when the Ethiopian emperor, Menelik, who was pursuing an expansionist policy, signed the Anglo-Ethiopian treaty with the British colonial government which transferred the sovereignty of western Somaliland to Ethiopia.

4.2.2 Impact and Household Responses

This was a killer famine. Although the level of deaths varied from one region to another, it is estimated that up to a third of the total population in Ethiopia, Somaliland and parts of Somalia died as a result of the famine. These deaths resulted mainly from starvation and diseases caused by the poor sanitary conditions that existed during the cattle epidemic. Considerable depopulation was reported to have occurred in the areas severely hit by the famine. Accounts of early travellers show that entire villages were wiped out by epidemics such as cholera.

The famine had far-reaching economic and social consequences. It also resulted in a very high loss of livestock. Ninety per cent of the total cattle population is reported to have been killed by the epidemic. Large numbers of other animals also died during the famine because of the outbreak of diseases. In Somaliland, it is still widely remembered as one of the most severe famines ever in the history of the country. In the Haud region, the great famine is known as *Filqa* which means "break-up" or "disperse", referring to the fact that people were forced to disperse during the famine.

In southern Somalia, the accounts of early travellers indicate that the famine had a catastrophic impact. Italian travellers who visited Lugh and Juba areas

during the famine reported tens of thousands of cattle owners who had lost all their livestock. The deaths of oxen, in particular, had a serious effect on the agricultural areas. As a consequence many farmers in southern Somalia started hand cultivation. Some local farmers started to experiment with the use of other animals such as donkeys to plough the land in lieu of oxen.

Somali poems recall the devastation of the famines. In one of his poems the great Somali poet, Ismail Mire (1860-1951), describes the great famine in one of the most popular Somali poems - A Hoopoe Rebuked[3]. The poet composed this poem when he saw a hoopoe crying for rains. Reminding the hoopoe that it was not alone in the suffering, he said:

O Hoopoe, when you shed those tears,
Crying for the rains of spring
And spurning the lightest wink of sleep
Just because your craw is empty,
Do you imagine that you, and you alone
Are scorched by this dry season of *Jiilaal*?

No, a great disaster has befallen
All God's servants, every one of them -
A [famine] has come that leaves nothing in its wake,
Just like the one that men called the Stalker,
Can it be right, then, to air your grievance
As if the suffering were yours alone?

Listen, O Hoopoe, to my tidings,
There are camels, once the strongest of the herd,

[3] This poem was translated by Adrzejewski (1993)

That now look spare and gaunt -
There are men, once rich with milch-beasts,
Who are now too weak to rise at the assembly-ground.
Young men drift to the village, loitering, looking about -
In the shops there are dates, and guard must be kept
For they would take those dates and run
But for their fear of the tin-roofed jail.
...
Never does the lion of the rocks now roar on Toomo plain
And the leopards that once were killers of goats
Have perished themselves at the hands of hunters -
... Gone are the burden camels, gone are all the short-horned cattle
Sheep and goats, fattened for slaughter, are scarcely to be seen.
The skin flask from which the ghee was served
Is shrivelled and musty from disuse,
For want of oil the hair of goodly wives
Is now so brittle that it splits and falls.

Look, O Hoopoe, at those shining shapes
You see round you on the ground -
They are the bones of hyenas, bones of vulture, even.
... Thirst-stricken folk are dying in Garoowe and Bookh,
Exhausted, their bodies pricked by Gocondho thorns.
They have no grain, but what would it avail them?
The water to boil it in is nowhere to be found.
....
So Hoopoe, stop your wailing and your moaning
Or you may soon be hunted in your turn -
Stay quiet, speak softly, and you may yet escape arrest!

The economic and social consequence of a famine of this scale was one of devastation, insecurity and vulnerability to future droughts and famines. Many rural people consider the great famine as "the mother of the 20th century famines". The impact of the famine was such that the people affected never fully recovered from it. Although the intensity varied from one area to another,

the collapse of coping strategies and the social consequence of the famine were devastating. In some parts of Ethiopia even cannibalism which was unheard before was reported during the famine. Pankhurst tells the story of a man who killed and ate his wife. Based on this story, a popular song in Shawa says "his wife gave him indigestion". Other horrific stories that occurred during the famine are also reported.

Although there is no detailed information on how households responded to the development of the famine, limited records suggest that there were three types of responses. First, rural households started, for the first time, to engage significantly in market exchange by selling animals (mainly sheep and goats), hides and skins, in order to exchange for food grain. The sale of skins and hides peaked in the first two years of the famine, causing the total export value to go up by 28% between 1887/88 to 1888/89 (Table 4.1). The sale of skins and hides increased because pastoralists remove them from the animals just before they die and keep them for either local use or sale. Until this famine, sale of skins and hides was confined to the nomads who were in close proximity to the three main ports at the Red Sea - Berber, Bulhar and Zaila. Increase in total export value in 1888/89 suggests that there were increased sale of skins and hides (see table 4.1). This was accompanied by an increase in total imports value which rose by 22% for the same period. In fact, large quantities of grain had been imported for the first time to Zaila in the recorded history of

the port (Foreign Office 1892). The total value of trade through the main ports of Zaila, Berbera, and Bulhar shows that imports fell by 30% in the following year 1889/90 as pastoralists became impoverished by the famine.

Table 4.1 Value of Trade through Ports of Zaila, Berbera and Bulhar, 1887-1894

Year	Export		Import	
	Total Value (£ Sterling)	Index	Total Value (£ Sterling)	Index
1887-8	272,943	100	259,910	100
1888-9	349,179	128	317,836	122
1889-90	304,415	112	238,017	92
1890-91	351,987	129	296,025	114
1891-92	271,274	99	262,710	101
1892-93	314,284	115	312,825	120
1893-94	346,231	127	325,278	125

Source: Pankhurst, R (1965)

The second area of response was mass migration. Large numbers of famine

victims migrated to coastal towns and villages in the hope of obtaining imported grain. Others migrated to other urban towns in search of relief and assistance from relatives and mosques. Pastoralists who lost most of their animals migrated to the nearby villages and started to supplement their income by engaging in petty trading.

A further strategy adopted by the rural households was an adaptive response which led many nomads to break with the tradition of pastoralism by becoming settled farmers for the first time. Traditionally nomads were always contemptuous of cultivation, but circumstances forced them to start farming. It was after this famine that the first farmers in the Gabiley and Borama districts of Somaliland started cultivation. Since they had relatively larger herds of cattle than other pastoralists in the country, the losses they suffered were higher. The animal herds that survived the famine were below the minimum stock necessary for them to remain in pastoralism. Thus, they settled in the agricultural land nearest to the main towns and villages where they could farm and sell animal products.

4.3 Droughts and Famines, 1900-1959

The rural people have never fully recovered from the great famine and since 1900 famines have occurred frequently. From 1900-1959, there were eleven

droughts and famines with varying degrees of severity. Although the details of these droughts and famines are limited, rural people in Somaliland still remember them vividly. Depending on the causes, severity and how people coped with them, these droughts and famines are referred to, and described, using different local names. Table 4.2 shows the list of local names, areas affected and the main causes of these droughts and famines.

Five of the droughts and famines which affected most parts of Somaliland and Haud are reported to have been particularly severe. They are distinguished from other famines by referring to them as "abaar dad" or famines that resulted in starvation and deaths. Whereas, those that cause loss of livestock are referred to as "abaar duunyo". The word "abaar" is used to describe both drought and famine in the Somali language, therefore, there is no specific word for famine. However, the terms *abaar dad* and *abaar duunyo* which literally mean "human drought" and "animal drought" are used to differentiate between famines and droughts. *Abaar dad* which refers to famines that cause widespread deaths and human suffering is similar to what de Waal (1989) calls "famine that kills", whereas *abaar duunyo* refers mainly to excess losses of animals as a result of drought.

Table 4.2 Chronology of Famines and Droughts in Somaliland and Haud, 1888-1987

Year	Local Names	Areas Affected	Causes and Severity
1888-92	Filqa (Break-up)	Somaliland, Haud	Rinderpest epidemic, crop failures, locusts; A third of the population and 90% cattle were lost.
1903	Haarriya	Somaliland, Haud	Failure of rains and epidemic
1911-13	Xaaraama-Cune (eating forbidden food)	North-west Somaliland, Haud	Civil war and failure of rains (*Col iyo Abaar*)
1918-19	Harga-Cuna (eating skins)	Somaliland & Haud	Civil war and failure of rains (*Col iyo Abaar*), animal disease
1925		Somaliland & Haud	Failure of rains
1927-9	Qorkii (registering relief camps)	Somaliland, Haud	Failure of rains; 80% of sheep and goats died
1933-34	Gabato; Baaha	Somaliland	Failure of rains
1938		Somaliland	Failure of rains
1943-46	Adhi Gaba (loss of small stock)	Somaliland	Failure of rains
1950-51	Siiga-Case (bowl-dust, blower of red dust)	Southern and eastern regions of Somaliland, Haud	Failure of rains
1955-56	Arbacada; Nawriis (the Wednesday year)	Somaliland, Haud	Failure of rains; crop failure; civil war; epidemic disease
1959		Haud	Failure of rains
1965		Somaliland, Haud	Cattle epidemic
1968-69		Somaliland, Haud	Failure of rains
1974	Dabadheer (prolonged drought); Gaadhi-Ghaadhi-Saar	Eastern regions of Somaliland	Failure of rains; failure of government policy
1980		North West region of Somaliland	Failure of rains

4.3.1 Causes

Although there is no single universal cause for all the droughts and famines between 1900-1959, most of them were triggered by failure of rains. This often resulted from failure or delay of the main *Gu'* (spring) season or sometime the failure of the *Deyr* (autumn) season. However, droughts and famines were rarely caused by failure of rains in only one season but a failure or shortage of rains over a successive period of seasons. The two famines in 1911 and 1918 were reported to have been caused by failure of *Gu'* rains in two successive years. In the 1918 famine, which was a major famine, the failure of the rains had been accompanied by an outbreak of animal disease that killed most of the livestock population.

In addition to the failure of rains, plagues such as locusts, epidemic diseases and civil wars were proximate causes of the famines. Indeed the most severe droughts and famines were often caused by occurrence of these calamities in addition to the failure of rains.

After the great famine, the first famine in the twentieth century in 1911-13 was caused by several years of successive poor rains and outbreak of civil war. Although rainfall records do not exist for that period, oral accounts report exceptionally low rainfall from 1909. Failures of rains were exacerbated by

serious disruptions of trade caused by the uprising of Sayid Mohamed Abdullah Hassan (The Mad Mullah) and his army (Dervishes) who were engaged in a war against the British administration and the Isaaq clans. Proliferation of weapons during the war, 1889-1920, between the Dervishes and the British administration led to tribal conflicts in the country. After many raids by followers of Sayid Mohamed Abdullah Hassan against the clans who were opposed to his leadership, the British administration supplied arms to the friendly tribes so that they could defend themselves against the Mad Mullah and his Dervishes. But the clans used the new weapons to settle old scores and as soon as the British forces withdrew to the coastal towns in Berbera, Bulhar and Zailah in what has become known as the "coastal concentration" in 1910, serious fighting broke out between the friendly clans. During this conflict large scale raiding and looting took place which led to the severe famine in 1911-13 in which an estimated one-third of the male population died (Colonial Office 1957).

In 1918 there was another major famine in the country also caused by a combination of factors, including successive failure of rains, trade disruptions caused by continued war between the colonial government and the Mad Mullah and an epidemic disease which killed animals. Like the previous famine, conflict played an important part in the development of the famine.

The drought and famine in 1927-29 were caused by three years of low rainfall. The rainfall records for the major towns in Somaliland show that the distribution was very poor and total amounts were generally lower than the long term average. For example, in Hargeisa, despite exceptionally good rains in 1926, the amount of rainfall recorded in 1927 and 1928 was 370 and 316 millimetres - well below the long term average of 431 mm. The rainfall recorded in 1928 was one of the lowest for more than four decades. In Sheikh, which receives an average of 520 mm, the second lowest rainfall for more than three decades of 297 mm was recorded in 1927. The distribution of the rainfall was particularly poor. This was the case in Burao where annual rainfall for the two years, 1927 and 1928, was higher than average, but poorly distributed. In 1927, more than 60% of the rain fell in just two months. Similarly, in 1928 more than 90% of annual rain fell in the months of May and November. The situation was exacerbated by large swarms of locusts which stripped trees and destroyed pasture and crops during the months of July and August in 1928 (Boothman 1975). This is the first time that locusts contributed significantly to a drought. From 1928 until the late 1950s, locusts were a significant factor in droughts and famines.

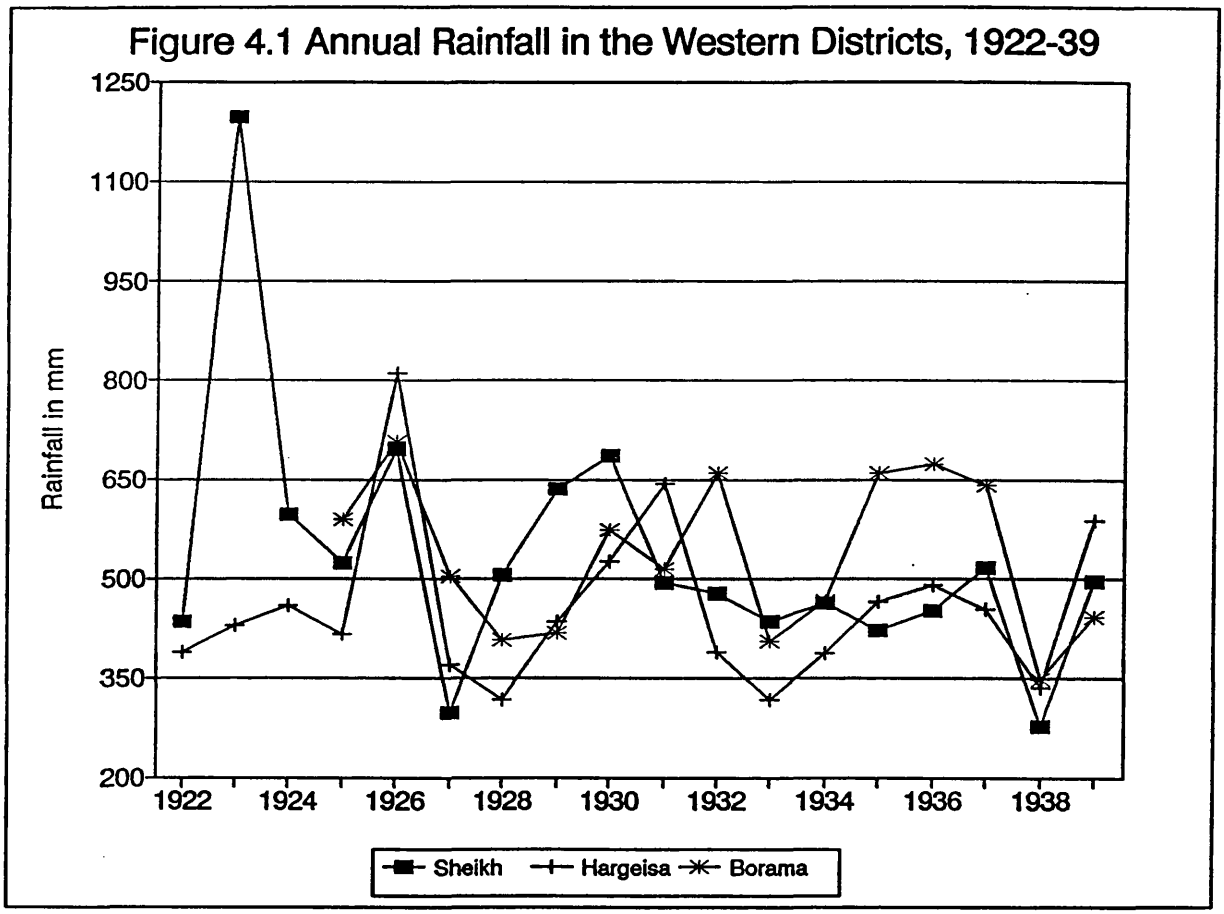
Figures 4.1 to 4.4 show that rainfall was substantially lower than average in 1933-34, 1938, 1950-51, and 1955-56. It also shows that the rainfall patterns of these regions were correlated, causing the droughts to be national rather than

localised. However, it was not only the correlation between regional rainfall which reduced the movement of the nomads across regional boundaries, but more importantly it was the conflict between clans which prevented the pastoralists from crossing regional boundaries or moving freely in search of pasture and water. A serious outbreak of rinderpest in the Borama area in 1934 (Colonial Office 1935) also contributed to the drought in 1933-34.

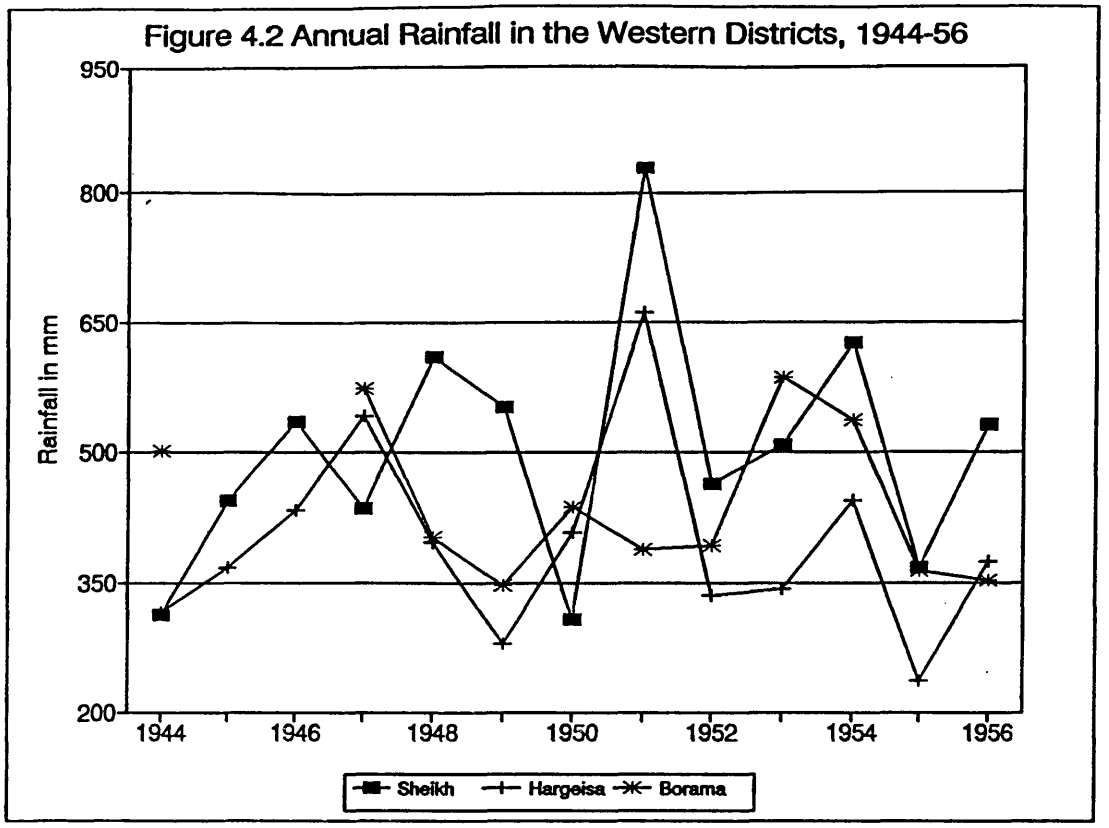
Although both droughts in 1950-51 and 1955-56 were particularly severe and affected most of the country, the 1950-51 drought hit hardest in the eastern parts of Somaliland where both the main *Gu'* and *Deyr* rains failed. After the failure of the main *Gu'* rains, pastoralists in the region migrated to the grazing areas in the south, but subsequent *Deyr* rains also failed, causing the widespread mortality of animals (Colonial Office 1952). In 1950, Burao received only 48 mm of rain - the lowest figure since records began. Other towns in the region such as Ainabo, Ber, El-Afwein received 33 mm, 72 mm, 31 mm respectively - also their lowest records. Because of exceptionally high, dusty winds throughout the country, the drought is remembered as *Siiga-Case* or "the blower of red dust" (Swift 1977).

The last drought in this period occurred in 1959 and was also caused by failure of rains. Severe water shortages were reported in this drought to have resulted in the loss of many animals. But relatively successful intervention by the

colonial government in transporting water to pastoralists contained the development of the drought.



Source: Colonial Office, Annual Reports.



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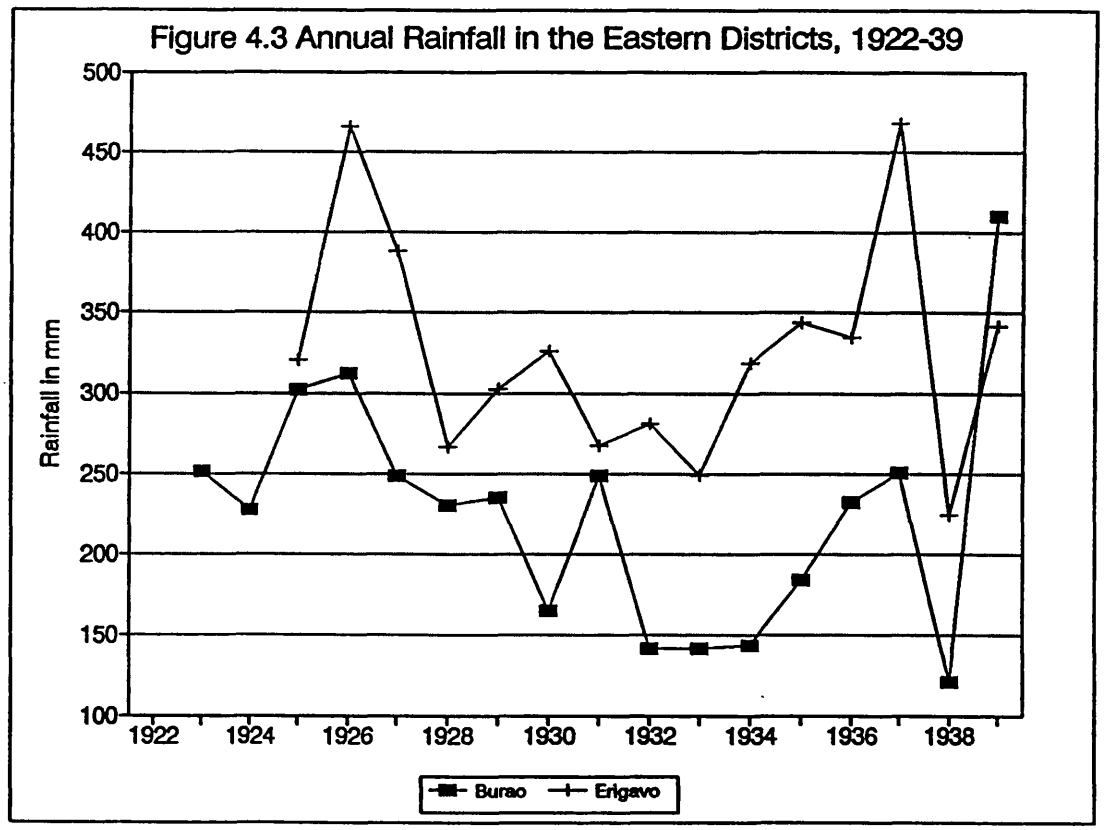
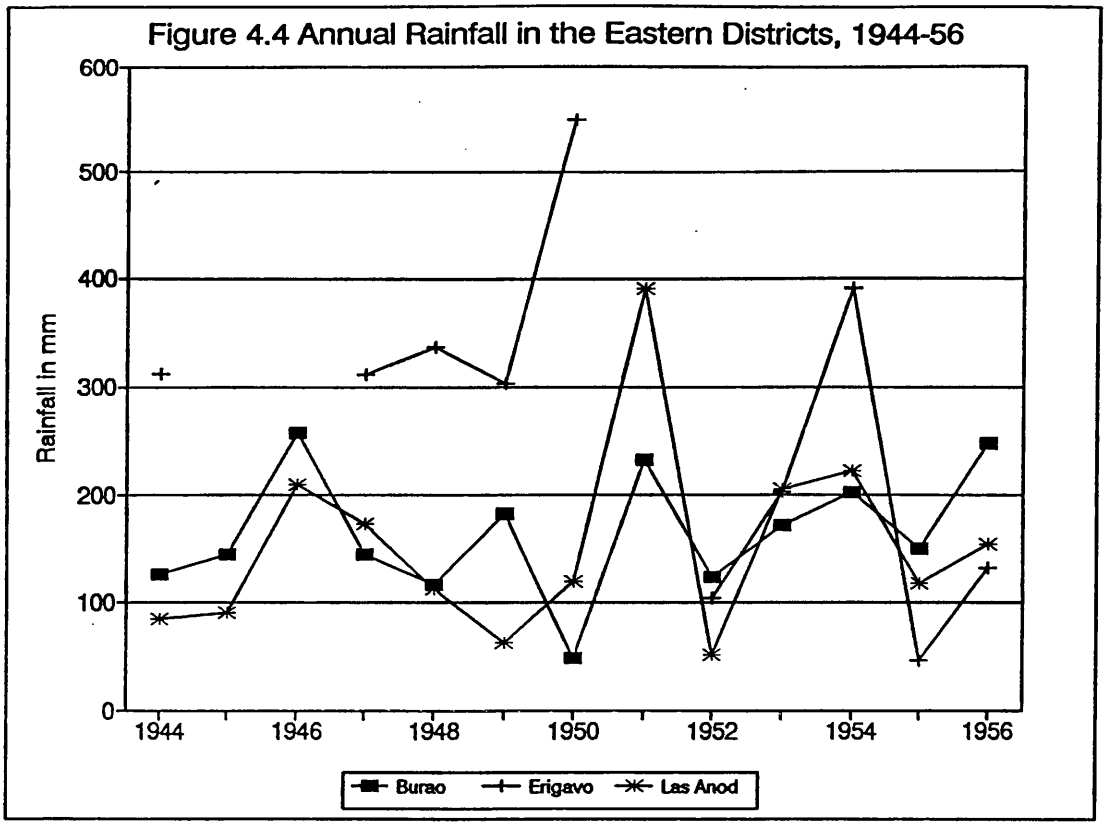


Source: Colonial Office, Annual Reports.



Source: Colonial Office, Annual Reports.

4.3.2 Impact

The droughts and famines between 1900-1959 had serious effects in rural Somaliland, causing large numbers of human and animal losses. During this period, there were five major droughts and famines which caused widespread destitution and starvation in many parts of the country. Of these droughts and famines, the most serious one hit the country in 1911-13. Because of the severity of the famine, people were reported to have eaten food that was not *Halaal* or clean for Muslims to eat and hence became known as *Xaaraama-Cune* (eating forbidden food). This is one of the few famines in which most of

the deaths resulted from starvation rather than epidemic. Although there are no statistics on the number of deaths, elders and local historians interviewed reported an exceptionally high level of mortality. In some clans, a fifth of their population was estimated to have died during the famine. Colonial government reports estimate that up to a third of the total male population in the country perished in this famine (Colonial Office 1957). Moreover, major losses of animals also resulted in widespread destitution among the pastoralists.

The 1918 famine which occurred only five years after the 1911-13 famine had an equally devastating effect on the country. It is still widely remembered as one of the most severe famines in living memory. In this famine, people were reported to have eaten skins and, therefore, it became known as *Harga-Cuna* (eating skins). Like the previous famine many pastoralists lost their animals and became destitute. In Berbera alone, the colonial government provided daily relief to 960 adults and 250 children in the month of February 1918 (Boothman 1975). This was the first time in the history of the country that a relief camp was opened for famine victims.

Another major famine which had a devastating impact on the rural people was the one in 1927-29. It killed up to 80% of sheep and goats in Somaliland (Colonial Office 1928) and left tens of thousands of pastoralists destitute. A British official who travelled through the country during the famine was

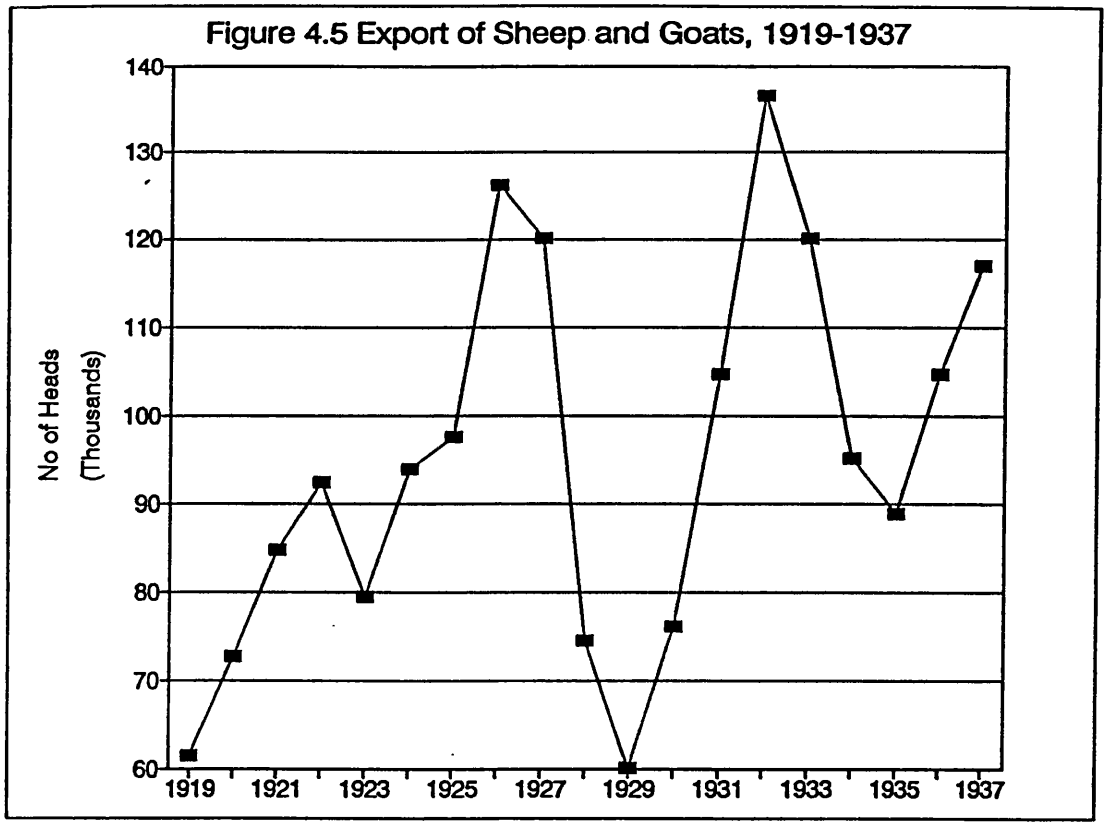
appalled by what he encountered (Colonial Office 1930: 7). He wrote:

> it was possible to travel hundred miles, through a depressing odour of decaying animal flesh that would make stock yards smell sweet by comparison.

Because of the scale of the famine, the colonial government had taken measures to provide relief to the destitute families by opening a relief camp at the coastal town of Bulhar. At the height of the famine, there were 15,288 destitute people in the camp (Boothman 1975). This period became known as *Qorkii*, referring to the registration of famine victims at relief camps. Given the scale of destitution, only a small percent of the destitute population registered at the relief camps. Perhaps this was because of the social stigma attached to seeking relief in government camps in those days. Instead, most of the destitute families relied on assistance from their relatives.

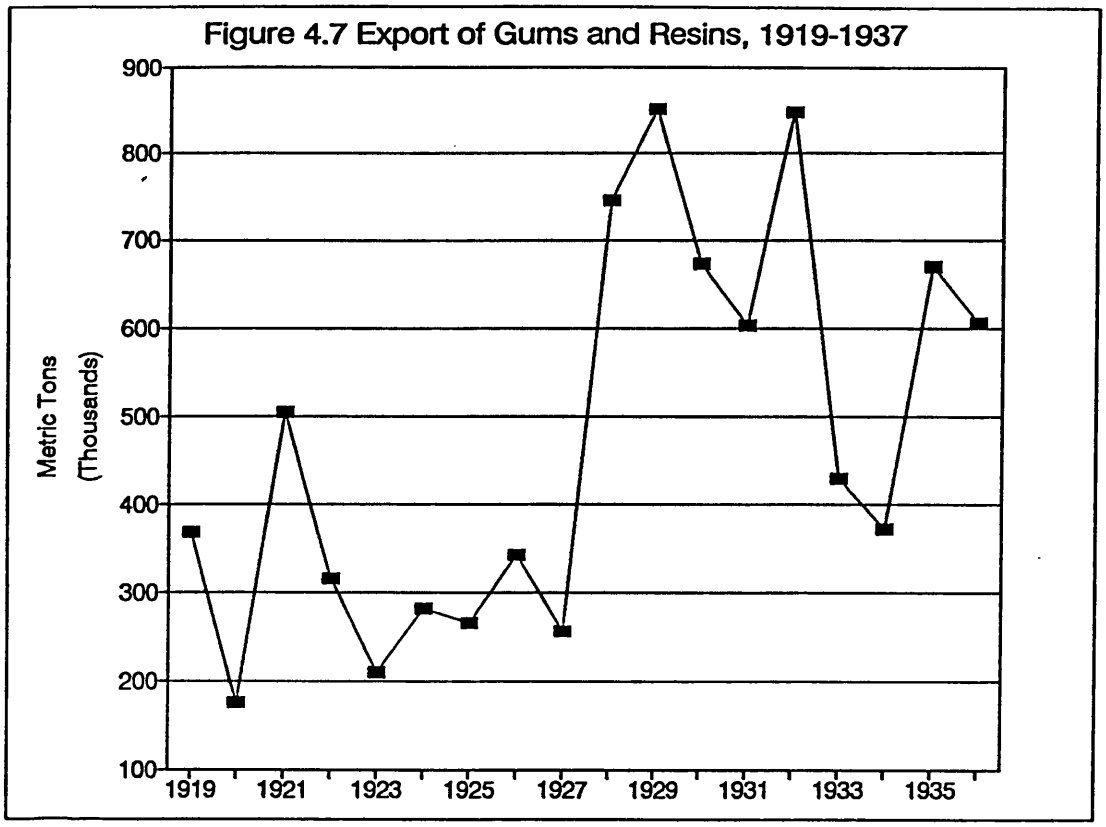
The effects of the 1927-29 famine were reflected by drastic changes of trade in the country. The loss of animals caused the export of sheep and goats to fall to a record low in 1929 as shown in figure 4.5. The data shows that the export of sheep and goats did not recover to pre-famine levels until 1932. In contrast, the export of skins rose sharply to reach its highest level since the records began as shown in figure 4.6. The number of skins exported jumped from 1.75

million in 1927 to 3.77 million in 1928 (ie 115% increase). This sudden increase in the number of skins exported was due to the increased slaughter of animals during the famine. When animals are very weak and have little chance of survival in droughts and famines, pastoralists slaughter them and remove the skins so that they can at least sell them. Thus, the export of 3.77 million skins was the result of the widespread slaughter of sheep and goats in 1928. The export of gums and resins also rose sharply during the famine (Figure 4.7). On the other hand, food import rose sharply. For instance, the import of rice rose by 79% from 1926 to 1927 and then doubled again to reach its peak of 10,590 metric tons in 1928 (figures 4.8). Similarly, the import of dates increased by 162% from 1927 to 1928 to reach its highest level for four decades (figure 4.9). Dates were particularly valuable to the pastoralists during periods of food crisis because they could be readily eaten without requiring water for cooking. Thus, most of the imported dates found their way into the rural areas whereas rice was mainly consumed in the urban towns.

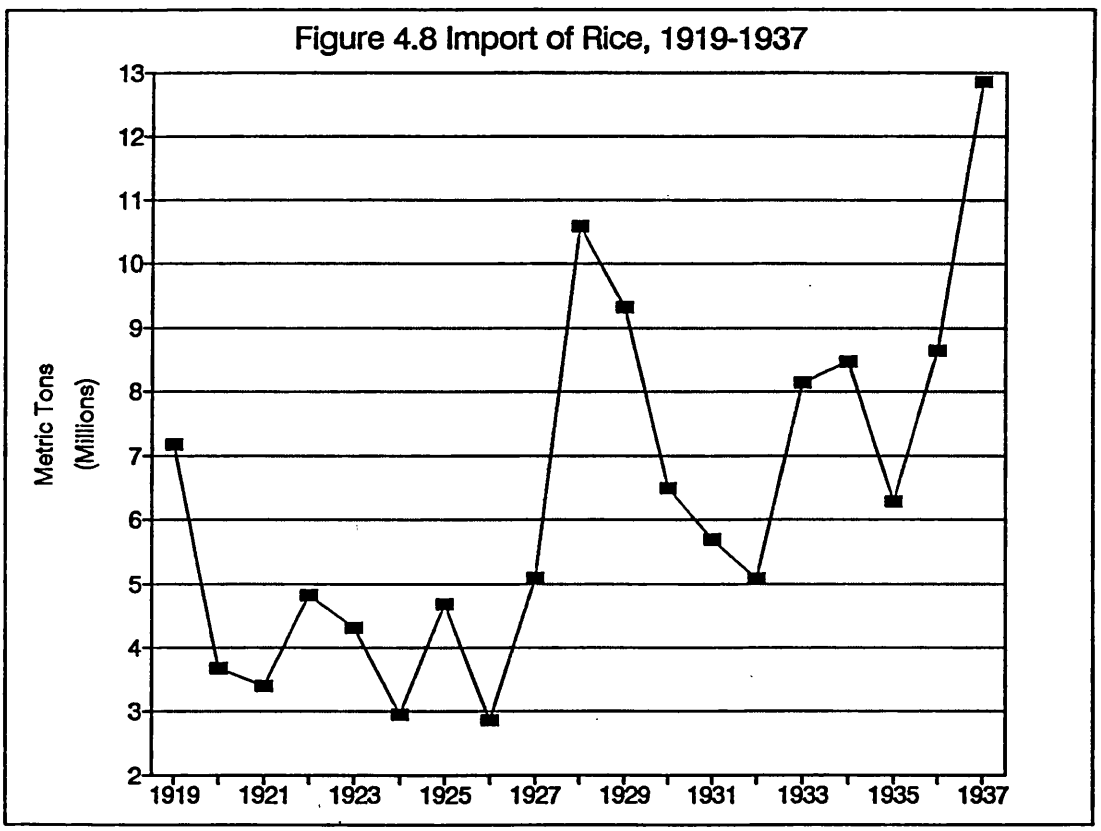


Source: Colonial Office, Annual Reports.

Source: Colonial Office, Annual Reports.



Source: Colonial Office, Annual Reports.



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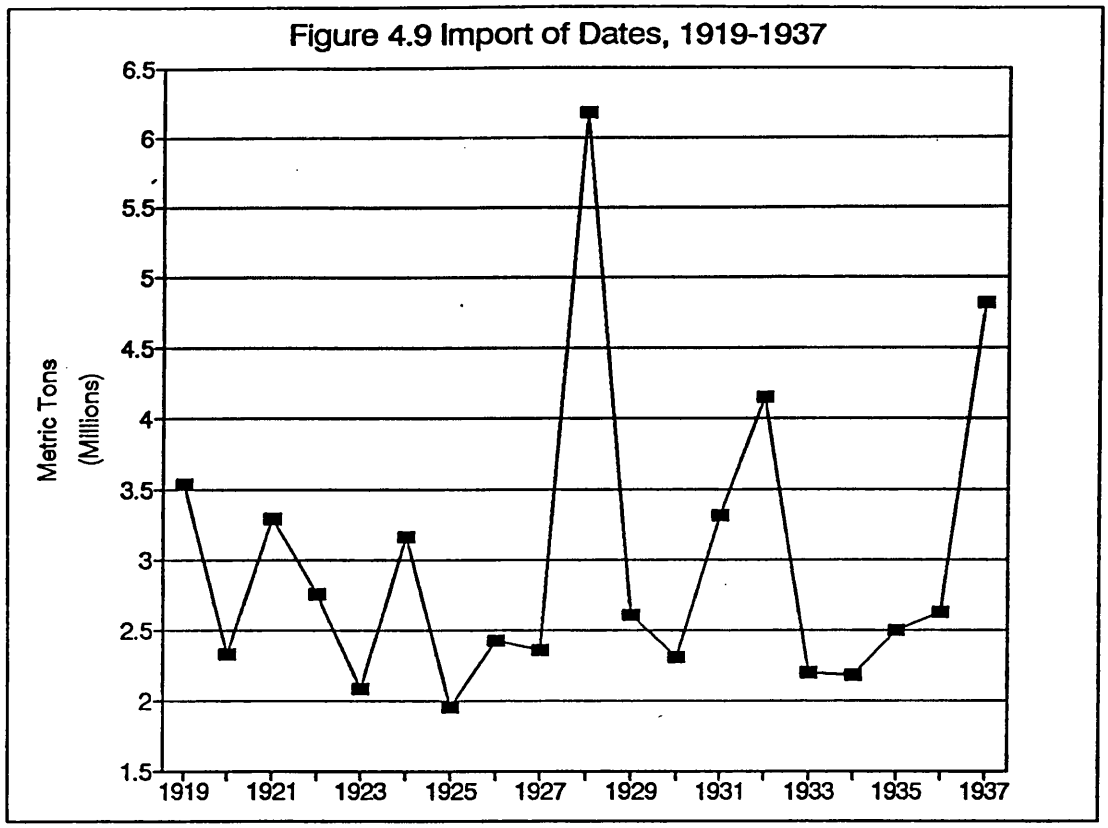


Source: Colonial Office, Annual Reports.

The fourth major famine in 1933-34 also resulted in a high level of destitution throughout the country, though conditions were most severe in the Erigavo district. Relief camps were established near Erigavo and Berbera during the famine with a population of 3,000 and 6,000 respectively. Like the other famines, the export of sheep and goats fell in the second year of the famine, while the export of skins increased during the two years of famine (figures 4.5 and 4.6). As shown in Figure 4.8, the import of rice also rose sharply.

Although the famine in 1950-51 was most severe in the Burao district and Haud, it had a serious impact throughout the country, causing thousands of

deaths and widespread destitution. At the peak of the famine more than 10,000 women and children were receiving relief in camps in Erigavo, Buran, El-Afwein, Berbera, and Burao provided by the colonial government (Colonial Office 1952). Large numbers of deaths caused mainly by disease rather than starvation were reported during the famine. Most of the deaths in the second year, for instance, were caused by the outbreak of a malaria epidemic following exceptionally good rains in mid 1951. Similarly, more than 1,000 people died in the relief camps because of poor sanitary conditions and malnutrition. For the first time the colonial government had instituted food-for-work programmes for the famine victims. Destitute men were given employment on road construction programmes, while women, children, and the aged or infirm men were admitted to the relief camps.

The famine also caused an estimated 80% loss of livestock between July 1950 to March 1951 in the eastern part of the country[4] (Colonial Office 1954). The export of livestock fell in 1950 as a consequence, though the fall was less drastic than previous famines. Like other famines, the death of animals was accompanied by the increased export of skins. Export of gums and resins which were collected mainly from the eastern parts of the country increased by 114%

[4] Pastoralists attributed this exceptionally high loss of animals partly to the gammexane chemical used to control locusts. They claimed that the chemical poisoned wells and pasture and caused significant number of animal deaths.

in 1950, suggesting that increased number of people were engaged in gathering and selling of gums and resins. In the eastern districts of the country, where the famine was more severe, it created a conflict between the two majority clans in the area - Dolbahante and Habar Jealo - which resulted from a dispute in the grazing and water rights in the south of the territory. More than 80 people were killed in a fighting which took place in the Las Anod district between 1952 and 1953 (Colonial Office 1957).

The last major famine during the colonial administration in 1955-56 also had a significant impact on the country. It is locally known as *Arbacada* or "The Wednesday Year", referring to the fact that the year started on Wednesday which local people associate with severe droughts[5]. Because herds had not recovered from the previous drought, pastoralists were less able to cope with this famine. As a result, there were heavy losses of livestock in the second year of the famine and famine conditions were reported throughout the country. Although there was a relatively small fall of sheep and goat exports in the second year of the famine, export of skins increased as expected, suggesting that a large number of animals had been slaughtered. A relief camp was opened in Abdul-Kadir in the west of the country for the famine victims. Similarly,

[5] If the new year in the local calendar coincides with Wednesday, people expect calamities such as severe droughts, civil wars and epidemics. The period is then referred to as *Arabacada* (Wednesday).

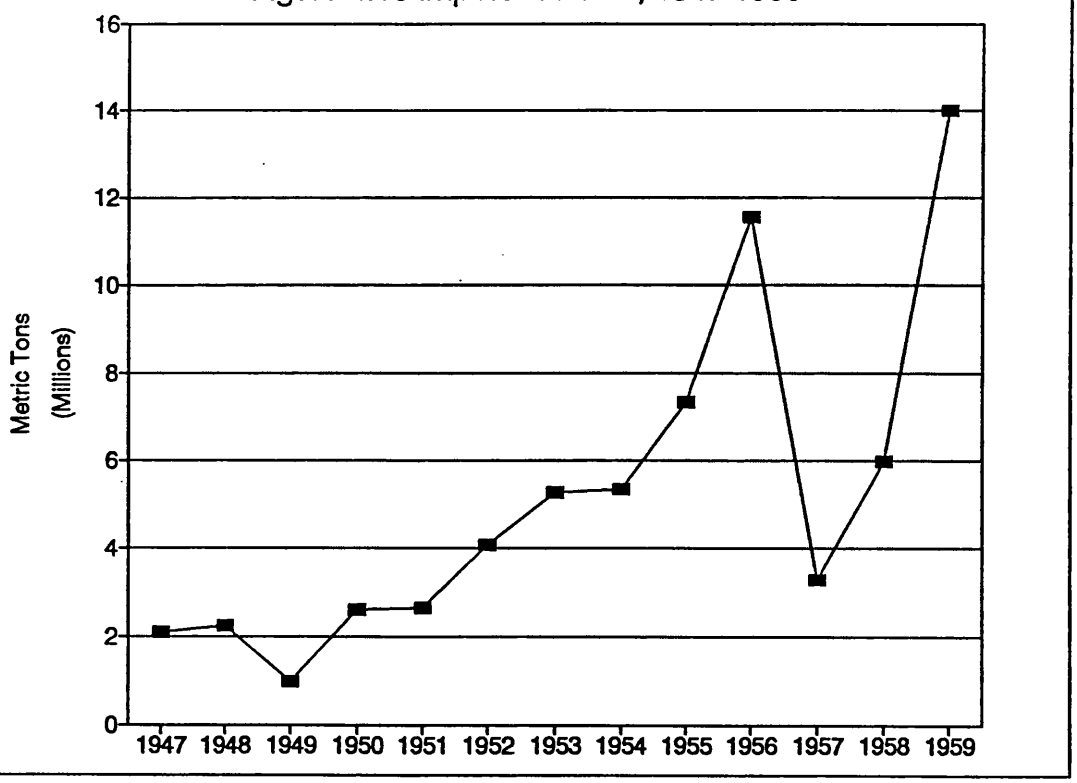
food-for-work programmes were resumed by the colonial government for destitute men (Boothman 1975).

Figures 4.10 and 4.11 show that there was a sudden increase of food imports during the famine. The amount of rice imported more than tripled from 1954 to 1956, reaching the second highest record for two decades. Probably because of a lack of purchasing power and good rains which reduced the requirement for imported food after the earlier famine, the amount of rice imported was less than 1,000 metric tons, the lowest ever record, in 1953. Yet this famine changed the trend and the import of rice peaked to 9,204 metric tons. At the same time, the import of dates increased sharply, while the figures for millet which was imported from Ethiopia also showed the same trend. However, the data for millet are not very reliable because unlike other items which passed through the sea ports, an accurate measurement of millet trade was not possible given the free movement of pastoralists through the nominal border between Somaliland and Ethiopia.

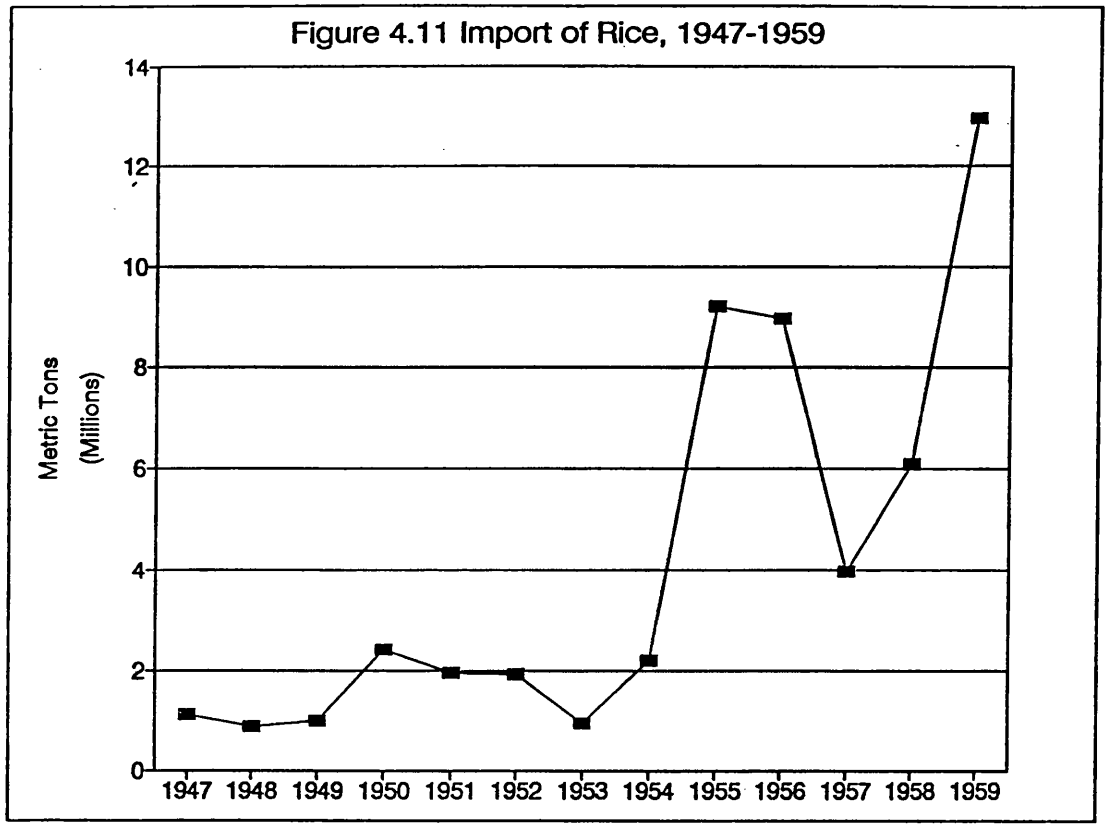
The last major drought during the colonial administration in 1955-56 was relatively less severe than earlier droughts and famines. Yet, exceptionally high food imports in 1959, as shown in figures 4.10 and 4.11, suggest a shortage of food in the country. Because of the failure of *Gu'* rains, widespread crop failures were reported in the western parts of the country which contributed to

the shortage of food grains. Acute water shortage was also reported in the Hargeisa district during the drought, forcing the colonial government to take emergency measures and mobilise transport to supply water to both the pastoralists in the area and inhabitants of the capital, Hargeisa (Boothman 1975). Although this intervention covered only one district, it is believed that it was largely successful in averting widespread human and animal losses.

Figure 4.10 Import of Dates, 1947-1959



Source: Colonial Office, Annual Reports.



Source: Colonial Office, Annual Reports.

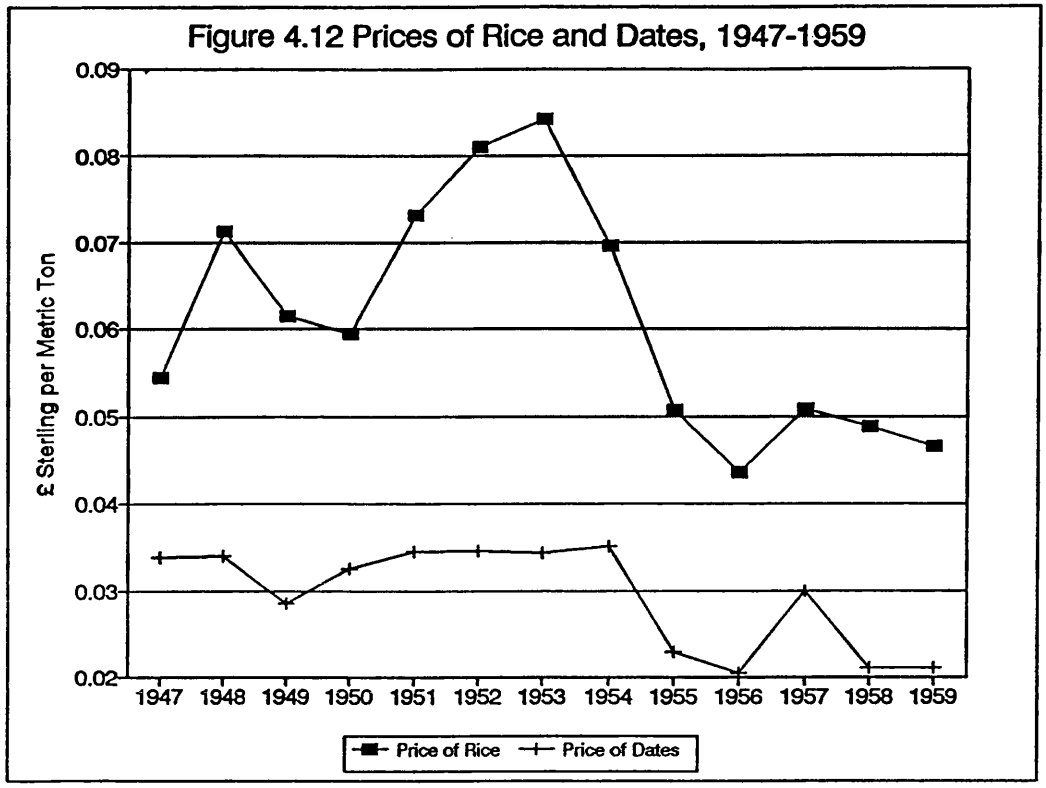
4.3.2 Household Responses

Although there is no detailed information on rural household responses during these droughts and famines, oral accounts and some of the available documentary sources indicate several response patterns. First, during the famines, households increased their involvement in market exchange by stepping up the disposal of animals and animal products. Increased animal sales are shown by increases in animal exports in the first year of most famines and droughts. Although there were exceptionally high losses of small stock in most of the famines, export figures show no corresponding fall. For instance,

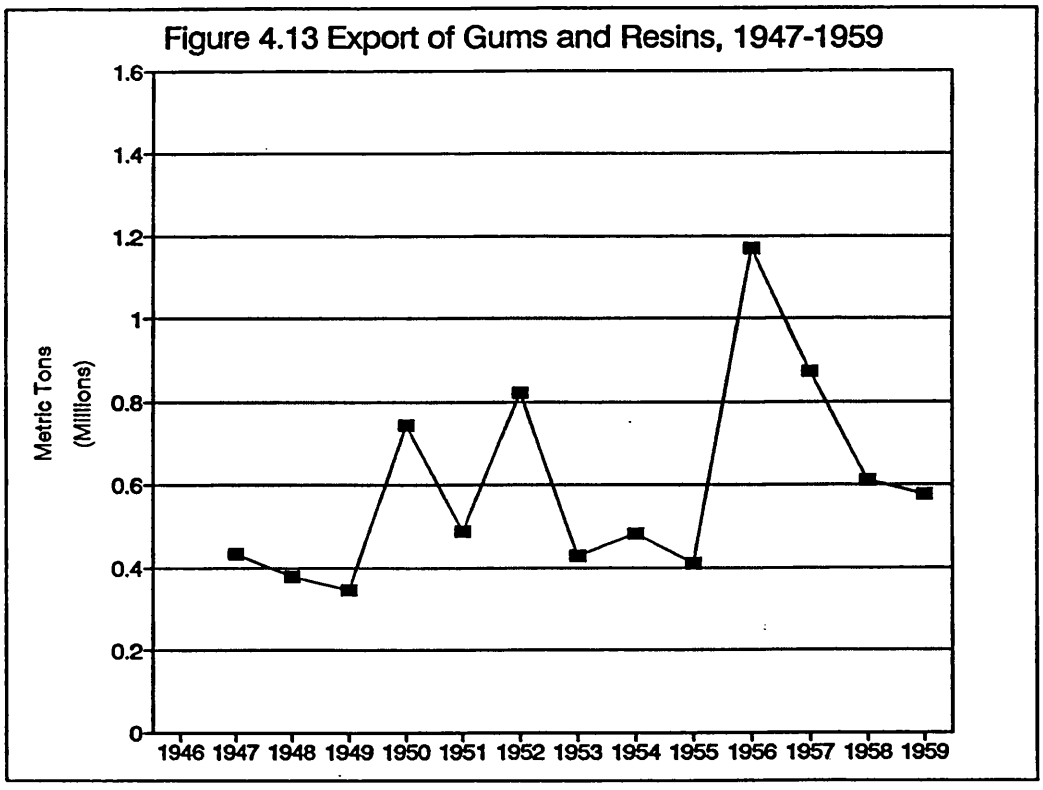
between 1927 and 1928 more than 80% of the small stock died, but the annual export of sheep and goats fell by only 38%. Similarly, in the equally disastrous famine in 1955-56 which also resulted in animal losses of more than 50%, export of small stock between 1955 and 1956 fell by only 3.4%. This suggests that, in spite of high losses of livestock, pastoralists continued to sell large numbers of live animals. Furthermore, increased sale of skins provided them with the extra revenue they required to purchase imported food items since they were no longer able to meet their subsistence requirement from livestock products such as milk and ghee. Pastoralists slaughtered large numbers of animals that had little chance of survival in droughts and were not suitable for sale.

Free trade with the outside world certainly provided reliable markets and some security in crisis periods. The markets for both live animals and animal products remained stable throughout droughts and famines. No significant changes in the prices of export animals and imported items were reported. Although price data is not available, oral accounts suggest relatively stable market prices during the famines. Similarly, import prices remained relatively stable at these times (figure 4.12). The port of Berbera was the main reference market for the rest of the country and with the exception of conflicts most of the pastoralists traded their goods for food and manufactured items. The exchange of animals and animal products for food and manufactured goods was

central to the pastoralists even in normal years (Swift 1979).



Source: Colonial Office, Annual Reports.



Source: Colonial Office, Annual Reports.

Second, during the more severe famines some households responded by migrating to villages and towns in search of employment or relief. Most of these households migrated to towns such as Hargeisa which previously had a very small population of about several hundred people. However, in most cases not all household members migrated to towns. Instead, households sent some of their members to the towns. Which members were sent away depended on the severity of the famine and the opportunities available in the towns. For example, sending children and the elderly to stay with relatives in towns was common in most droughts, but adult members also migrated to towns in search of employment in severe famines. However, the bulk of the permanent migration to urban towns took place after the Second World War when most major towns, such as Hargeisa, were established.

Third, many households adopted a new strategy for augmenting their incomes by working for wealthier families who had large herds and required labour. It was often the adult members of the families who had lost most of their livestock, that engaged in this type of activity. In addition, other income generating activities such as selling firewood, charcoal, and gums and resins were also taken up by an increasing number of households. There are no statistics for trade in firewood and charcoal, but data for gums and resins (Figure 4.7) show that their trade increased substantially during droughts and famines. Figure 4.7 and 4.13 show an increasing overall trend in the trade of

gums and resins which suggests that an increasing number of people were involved in collecting and selling gums and resins.

Fourth, pastoral households also adopted a system of redistribution in which destitute households were assisted by relatives. One of the most common methods of redistribution known as *Xoolo Goyn* involved giving some breeding animals to the destitute and the very poor who had lost most or all of their animals in the droughts. Other systems of redistribution widely used include *Zekaat*[6], alms gifts and remittances from relatives working in the towns. Although there had been some changes in the traditional social networks as a result of increased market involvement (Swift 1979), they largely remained effective in times of crisis.

As a response to increased frequency of severe water shortages in drought periods, many households invested in building cemented ponds (*Berkado*) from the 1950s to store water for human and livestock use during the dry season. These new private watering points and large dams (*Balliyo*) constructed by the colonial government in the grazing areas helped to reduce water shortages and the overcrowding of animals around the few existing permanent wells.

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[6] It is the duty of every Muslim who lives above subsistence level to pay *Zakaat* for the relief of the poor. This is not a charity but a legal claim by the poor against the rich. The rate varies according to the wealth, but it starts with a 2.5% of the person's total assets.

Diversification of the species of animals owned was another strategy adopted by the pastoralists to minimize the risks of droughts. They kept herds composed of camel, cattle, sheep and goats. Because these animals are affected by different diseases and have different resistance to droughts, pastoralists minimized the risks of losing all of their animals in droughts or epidemics. Of particular importance are the small stock which breed more quickly and rebuild stocks after droughts or diseases. However, as result of a shift from a mainly subsistence to a more commercial pastoral economy since the early 1950s the species composition of herds has changed (Swift 1979) with a substantially increased proportion of small stock to camels. This meant the ownership of fewer camels.

A further common strategy adopted by the pastoralists was splitting herds according to sex, breed or productivity and spreading them over a wide range of area. This involved separating large animals from small stocks or separating herds into milking and dry herds. In this herd management system, for example, the main herds were often taken away to distant pastures and dry season grazing areas, while milking animals were kept close to the main watering points.

A remarkable feature of the responses adopted by the households has been their ability to cope with the effects of the droughts and famines. Indeed most of the

droughts that affected the country did not translate into famines mainly because households adopted strategies that mitigated the effects of these droughts. It was only prolonged droughts together with wars (*Col iyo Abaar*) and other plagues such as locusts and epidemics that turned to major famines. Even in these famines, their coping strategies helped them to prevent widespread starvation despite the lack of any major relief interventions. Commenting on the recovery of pastoral households after the 1927-29 famine which killed 80% of small stock in the country, a British Somaliland government official remarked that (Colonial Office 1931: 7) they have:

> proved surprising resilient, and although the normal has not yet been reached, there is reason to hope to that the recovery will be complete within the next two years provided there are no further abnormal conditions to impede progress.

4.4 Droughts and Famines, 1960-87

From independence until 1987 at least four major droughts with varying degrees of severity hit the country. The first drought occurred in 1965, five years after independence, and affected parts of Somaliland and Haud. A cattle epidemic which killed large numbers of cattle herds was reported in this drought. The second drought in 1968-69 which also affected parts of Somaliland and Haud was caused by the failure of rains. Both of these droughts

were relatively less severe than previous ones before independence. However, the 1974-75 drought turned out to be one of the most severe famines since 1920. Although it affected many parts of Somaliland, it hit hardest in the eastern regions.

The 1974-75 famine coincided with the commencement of a rural development campaign aimed at teaching Somali nomads the official alphabet of the Somali language. The regime was busy in mobilising tens of thousands of students and teachers for the rural mass literacy campaign during the earlier stages of the famine and the early signs were ignored. It was only reported when several hundred destitute nomads gathered in the outskirts of major towns such as Burao and Erigavo. Government officials in the regions affected by the famine were aware of its development, but reluctant to report it to the central government in fear of being seen to be against the government's rural "prosperity" campaign. It was only after the first relief camps were opened near Burao and Erigavo that the government acknowledged the existence of the famine and the rural "prosperity" campaign turned into a desperate famine relief operation. In the beginning of 1975, there were more than 200,000 destitute people (Lewis 1975) in eighteen relief camps. By March 1975, some 5,000 destitute nomads were arriving at the relief camps per day (Hitchcock and Hussein 1987).

The last drought in this period occurred in 1980 and affected mainly the North West region of Somaliland and parts of Haud. One of the worst affected areas was Gabiley district where agro-pastoralists lost more than half of their animals. Severe water shortages were reported in this drought, but unlike the one in 1959 there was no government intervention. This drought also resulted in food shortages in the region following major crop failures. Since the late 1960s local food production had accounted for a large proportion of the total food consumed in the country, thus, crop failures had greater impact on food availability throughout the country.

With the exception of the 1974-75 famine, the information available on the droughts after independence is very limited and unreliable, thus the remainder of this section concentrates on the causes, impact and household responses of the 1974-75 famine.

4.4.1. Causes

This famine, which has become known as *Dabadheer*[7] (the prolonged famine), was caused by a severe drought which affected most of the northern regions (Somaliland) and Haud. The drought was "the culmination of four successive

[7] This is also known as *Gaadhi-Gaadhi-Saar* which refers to water tanks mounted on trucks to supply water to remote villages. It literally means putting a car on the top of another one.

years of poor rains" (Lewis 1975: 1). It was triggered by the failure of *Deyr* (autumn) rains in 1974 which led to severe water shortages. The water points dried up early in the season and as a result nomads were forced to move closer to the water points near dry river beds which still had some water early in the dry season. But because of overcrowding these wells soon dried up. In addition, there were shortages of pasture caused by the overcrowding of livestock in areas close to the towns and water.

The calamity began in November 1974 when cattle died in large numbers. By January of the following year, thousands of nomads had already lost most or all of their sheep, goats and cattle. Camels survived until late in the drought, but they then died in large numbers because of a lack of pasture. This was one of a few droughts in which a large number of camels - the most resistant and most prized of all the animals in nomadic life - died.

Furthermore, there was a serious shortage of food throughout the country which exacerbated the situation. Following the nationalisation of banking, imports and wholesale trade and the introduction of price controls, food markets in the northern regions were seriously disrupted. The response of private traders to the introduction of nationalisation and a centrally controlled system was panic hoarding and speculation which seriously affected food availability. Meanwhile, the food rationing system which the government introduced to replace the

existing free market system failed to work and only added to the speculations in food markets. The failure of the rationing system particularly in rural areas was even recognized by the regime at the time (Lewis 1975). Hundreds of government shops aimed at selling food items at fixed prices were opened in major towns and villages and residents were issued with identity cards to buy fixed amounts of food every week, but because of a shortage of supplies only small numbers of people managed to buy sufficient food in these shops. In the rural areas, pastoralists who were not registered relied on food purchased in the black market at exorbitant prices.

The widespread crop failure and the subsequent food shortages in neighbouring Ethiopia also contributed to the food crisis during the famine. Since the introduction of the food rationing system, most of the Somali pastoralists in the northern regions depended on cereal grains from the Hararghe region for their consumption. But this region was also affected by the drought. Indeed, Hararghe was one of most severely affected regions throughout Ethiopia and grain prices were reported to have tripled during the famine.

4.4.2 Impact and Household Responses

The 1974-75 famine had a significant impact on the pastoral households in the affected regions. It resulted in a very high loss of life and widespread

destitution. More than 20,000 people were reported to have died of starvation and malnutrition (Hitchcock and Hussein 1987) during the famine. Although no statistics are available, further deaths of the destitute nomads occurred after they were resettled in the southern agricultural areas of the country because of poor sanitation and malarial diseases. Moreover, it is estimated that more than 100,000 households became destitute as a result of the famine. Up to 300,000 people, representing 10%- 15% of the entire pastoral population were forced to register in relief camps (Haaland and Keddeman 1984).

The famine had far-reaching consequences on the rural economy, killing an estimated 5 million animals (Hitchcock and Hussein 1987). The export of animals which accounted for up to 90% of the country's foreign exchange earnings plummeted. Similarly, the slaughter of animals inside the country fell sharply. An analysis of the effects of the famine on the export and slaughter of sheep and goats shows that there was a significant downward shift of the trend of small stock exports and slaughtering. Results of regressions presented in table 4.3 show that subsequent exports of small stock were 49% lower than in the pre-famine period. Similarly, the famine caused the slaughter of sheep and goats to fall 11 percent below the pre-famine level. The share of Saudi livestock imports from Somalia which was 75% for small stock and 90% for cattle until the 1974-75 famine fell to around 50% (Russe 1982).

A further consequence of this famine was the dislocation of up to 75,000 nomads who were resettled in the agricultural land along the two rivers in southern Somalia. Pursuing its objective of settling pastoralists, the government settled drought affected nomads in three major centres in Kurtenwaarey, Sablaale and Dujuuma in southern Somalia. In the initial stages of the settlement programme pastoralists resisted the idea of suddenly changing their way of life and engaging in farming of which they had no experience. But circumstances have forced them to accept settlement of an alien environment. The re-settlement programme had a negative impact on the livelihoods of both the settlers and the households they left in the nomadic areas. It increased the vulnerability of the communities and members of households who were left behind in the drought-affected areas. This resulted mainly from the fact that relatives who supported each other in difficult periods became separated in this programme. At the same time it failed to provide a reliable source of income for the settlers, forcing most of them to return to their former way of life in pastoralism or to migrate to urban towns (Hitchcock and Hussein 1987).

Table 4.3 Regression Results

	$-77.36 + 0.04T - 0.49D$	
1. Small stock exports	(-3.7) (4.0) (-2.8)	
	$R^2 = 0.42$	
	$-52.65 + 0.03T - 0.11D$	
2. Small stock slaughter	(-18.6) (21.5) (-4.35)	
	$R^2 = 0.98$	

Where: D = 1 for famine period, D = 0 for non-famine period; T = Time; figures in parentheses are t-ratios; the data used for this regression is obtained from the FAO data series.

4.5 Conclusions

In this chapter I have traced the droughts and famines that have affected the country for one hundred years. Since the great famine in 1888-1892 there have been frequent droughts and famines in Somaliland and Haud. Although most of the famines were caused by failure of rains in successive number of seasons, the most severe were associated with civil wars. However, other plagues such

as locusts have also contributed to the causes of famines.

Pastoralists coped with these droughts and famines by developing a series of adaptive and coping strategies aimed at mitigating the effects on their livelihoods. These included increased market exchange, diversified herd composition, split-herding, a range of redistributive system, migratory movements, and sending members of their families to urban towns to send back remittances. Some of the pastoralists have settled and started cultivation, while others have started engaging in petty trade. These strategies have largely been successful in mitigating the effects of droughts and famines and preventing widespread starvation in most crises. Free trade and integration into the world markets permitted pastoralists to adopt more effective responses in terms of providing a relatively stable market and employment opportunities not only inside the country but also in neighbouring countries such as Djibouti and the Arabian Gulf.

An important difference between the famines in the colonial period and those in the post-colonial periods was the role of public interventions in responding to crises. In the colonial period various interventions, including famine relief, food-for-work schemes and the provision of water were undertaken during severe droughts and famine. Although these responses were often limited in scope because of budgetary reasons, they have largely been successful in

mitigating the effects of the droughts and famines. However, in the post-colonial period public interventions were conspicuously absent during droughts and famines[8].

[8] Some relief was provided to the victims of the 1974-75 famine at a very late stage of the famine.

CHAPTER 5. RURAL ECONOMY BEFORE THE WAR

5.1 Introduction

This chapter examines the structure of rural economy before the 1988 war. It describes crop and livestock production systems, the cultivation of *Qat*, the functioning of redistributive systems and the role of development programmes on agriculture in the district. It also discusses government pricing policy and the performance of food and livestock markets in the region. Using data from the 1987 survey and other studies conducted prior to the war, these issues are discussed to present a picture of the true situation of rural families before the war. This is important for understanding how the rural households responded to the food crisis from 1988-92 and how they coped (or did not cope) with the effects of the war.

5.2 Agriculture in Gabiley

Agro-pastoralists in the area practise a system of mixed farming in which livestock play an important role. They have cultivated food crops and raised livestock since the early 1900s. Rain-fed sorghum was the main food crop accounting for 75% of the cultivated area. Sorghum was the most important crop because of its resistance to droughts which occurred in the region every

five years. But maize and pulses were also grown as food crops. Watermelons, vegetables and *Qat* were grown as cash crops. Small farms irrigated mainly by pumping water from hand-dug shallow wells alongside the banks of dry river beds produced vegetables, water melons, guavas, citrus, and mangoes.

There were 6,029 farming households with arable farms in the Gabiley district in 1988, according to a village listing and household survey conducted in 1988 (NWADEP 1988b). Table 5.1 shows that the Gabiley district had the largest number of farming households within the two regions of the North West and Awdal. Only 9% of the farming households owned irrigated farms. Farming households in the district lived in settlements (*reers*). There were 777 *reers* in the district containing an average of 7.8 households. Generally there are wide variations in the number of households in a *reer*, which in the case of Gabiley ranged from 1 to 123 households. *Reers* containing large numbers of farming households were generally those that were closer to the town or around villages.

Table 5.1 Distribution of Farming Households and *Reers* in the North West and Awdal Regions

District	No of Farming Households	No of *Reers*	No of Households with Irrigated Farms
Gabiley	6,029	777	565
Hargeisa	4,095	1,255	649
Borama	1,691	348	75
Baki	3,245	621	117
Total	15,060	3,001	1,406

Source: Gazetteer: Village Listing Survey, NWADEP, 1988.

A major problem in the area was severe soil erosion. In the rainy seasons, hundreds of hectares of land were washed away by rain water every year. Recognising the threat of soil erosion to the district's arable land, the British colonial administration started investigations into ways of controlling soil erosion in the late 1940s by carrying out a series of trials. This was pioneered by two agricultural officers A. Seager and R.N. Green who constructed bunds (earth banks) adapted from Yemen where they had been used by the local farmers to control gullies and conserve moisture SAR (1976). Because the programme was based on simple technology that involved the use of local

labour and oxen, it was successful and farmers participated fully in the actual construction of bunds. Indeed, it was a low-cost conservation programme which the farmers were able to replicate and carry out any subsequent maintenance on their own.

The success of this small scale programme led to the set up of a USAID project in 1961 and a subsequent World Bank project which expanded bunding programmes into the rest of the arable land. The USAID project was confined to only two small locations in Gabiley district - Arabsiyo and El Bardale. Although this was also a small scale project, it was relatively successful in El Bardale where a religious community had been practising both dry-land and small scale irrigated farming as a cooperative. However, the modest success of this project was more to do with the organisation of the community rather than bunding per se. The community was led by a highly respected and well connected religious leader who invested large sums of money on the development of the community farms.

5.2.1 Agricultural Development in the District

Agriculture in the district was significantly affected by the establishment of a major development project in the region. In 1979, a US$40 million World Bank

project[9] - the North West Regions Agricultural Development Project (NWADEP) - was set up in the northern regions to improve the incomes of rural households by increasing crop yields through soil and water conservation. Since 1979, some 23,000 hectares of land involving 7,500 farms have been bunded in the three districts of Gabiley, Hargeisa and Borama. More than 70% of the farms in the Gabiley district were bunded from 1979-87. However, the project has failed to transform the traditional agriculture as intended. There are several reasons for this.

First, the bunding programme was carried out without testing its appropriateness and effects on crop yields as it was significantly different in terms of scale and technology from the previous programmes. Unlike the earlier soil conservation programmes, this project introduced heavy machinery to build larger bunds. Although this involved removing substantial amounts of the top soil, no attempt was made, for example, to assess its effects on soil fertility and yields. Citing these problems, such as the removal of top soil and exposure of the subsoil, farmers had originally resisted the new system of bunding. However, by offering free human and livestock water points for those who accepted bunding, the project overcame the farmers' initial resistance. Given the water shortage in the area, they had been forced to accept bunding primarily

[9] The second phase of the project which started in 1984 was co-financed by the International Fund for Agricultural Development and the EEC

as a means of getting access to free water points constructed by the project. In addition to water points, other services were offered such as land clearing which influenced them to accept bunding. Moreover, in some areas farmers bunded their land primarily because it provided permanent demarcation of their plots and greater degree of security of tenure (SOGREAH 1980).

Second, the participatory approach used in the earlier programmes was replaced by an approach which was essentially top down and imposed on the farmers. In the first two bunding schemes implemented in the region, the farmers' participation was necessary and they were required to take part in the construction and subsequent repairs and maintenance. However, this was no longer the case in this project in which the emphasis was to achieve set targets of bunding. Moreover, the project disregarded the local knowledge of conservation and the traditional system of water harvesting widely used to conserve moisture for *Qat* fields.

A third reason why the project failed was because of a lack of a repair and maintenance policy. The project management's preoccupation in achieving set targets of bunding meant that the quality control was neglected, resulting in frequent breakages of bunds. Farmers were supposed to carry out the repairs of broken bunds, but because of the size of the new type of bunds, repairing required heavy machines which the small farmers could not afford. Indeed,

most of the broken bunds were so eroded that they required redesigning and rebuilding. This was one of the most serious consequences of bunding, resulting in much of the bunded land to be abandoned by the farmers. For example, in Gogeysa, a small village five miles north of Gabiley, up to 80% of the bunds have been completely abandoned mainly because of lack of repairs. In the survey area, more than 25% of the bunds have also been abandoned. The breakage of bunds further accelerated soil erosion because once the structures break down they cause more serious damage than if they had not been built at all.

Farmers have also abandoned their traditional crop rotation systems as a result of bunding. Before bunding, farmers cultivated about one-third of their arable land, leaving the remaining area fallow for livestock grazing. After several years, the cultivated portion was fallowed and another part was cultivated. This system of rotation allowed the land to recover its fertility. After bunding, the bunded land should be cultivated continuously because if the bunded land is fallowed weeds take over and controlling then becomes very difficult. The area between the bunds harbours different species of weeds which cannot be controlled unless the land is cultivated continuously.

The abandonment of the traditional crop rotation system and the subsequent continuous cultivation of bunded fields had caused the soil fertility to decline.

The effect of this was shown by a yield study survey conducted in 1987 which found that the yield of bunded fields cultivated continuously without rotation was significantly lower than other fields (NWADEP 1988a). A further effect of bunding on the farming system was a decline in maize cultivation. Because of water-logging caused by uneven distribution of water in between bunds, farmers reduced the cultivation of maize, which is less resistant to water-logging. Instead, they increased cultivation of sorghum which is resistant to water-logging and nutrient deficiency in the soil caused by the removal of top soil in the bunded fields. Cultivation of legumes such as cowpeas which are less resistant to water-logging was also reduced. The effects of these were reduced diversification of crops and intercropping, both of which were important risk minimization strategies.

The use of oxen for land preparation was also replaced by tractors because of the fact the sub-soil exposed after the construction of bunds was too hard and compacted for ox ploughing. Consequently, less than 14%[10] of land preparation in 1987 were carried out by oxen compared to 80% in 1979 (Ahmed 1990). An important effect of this was an increased reliance on tractors which, because of a shortage of fuel and spare parts, were not often available at the critical time of planting and land preparation. In order to make maximum

[10] Oxen are, however, used for weeding (*Baab-baaq*) and thinning after the land preparation had been done by tractors.

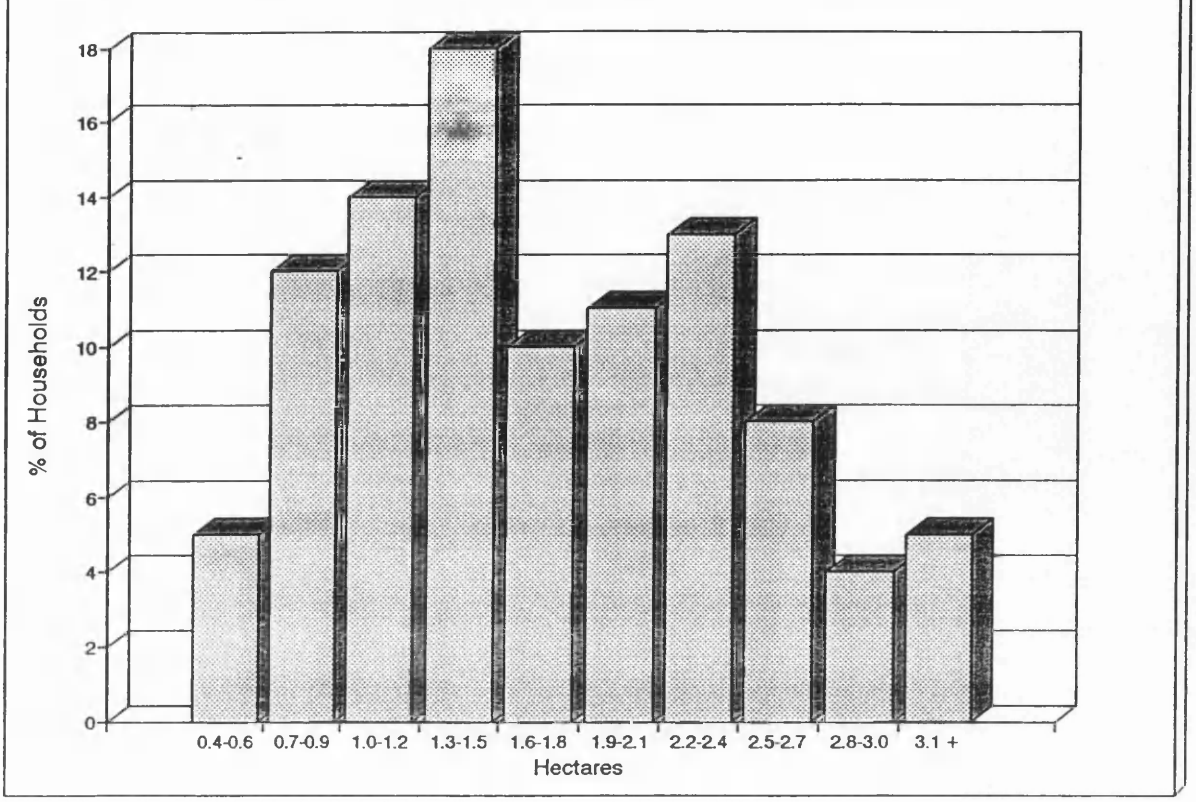
use of rain water and reduce the losses caused by birds[11] farmers sow their crops early in the rainy season, creating a peak period for tractor demand. Many farmers reported missing the ideal planting times because of the shortage of tractors (NWADEP 1988).

5.2.2 Crop Production

Sorghum was the principal crop grown in the area, accounting for 75% of the cultivated area. An average of 1.7 hectares of sorghum was grown by the farmers (NWADEP 1988a). Figure 5.1 shows the distribution of sorghum cultivation in Gabiley in 1987. Other crops grown included maize, pulses and water melons. While sorghum was grown as the main cereal crop, maize was grown as an early crop because of its shorter duration. Pulses were grown for intercropping with sorghum and maize, but water melons and vegetables were grown as cash crops. In addition, some farmers cultivated small scale irrigated farms along the dry rivers on which they grew mainly fruit and vegetables.

[11] Bird damage is highest in the months of October and November, therefore, farmers try to plant their crops as early as possible in order to harvest by September

Figure 5.1 Distribution of Sorghum Cultivation, 1987



Source: Survey data, 1987.

Grain yields of sorghum and maize were relatively low compared to average yields in similar environments. In normal years their average yields were 450 kgs and 550 kgs respectively. There are several reasons for this. Firstly, a broadcasting method of planting practised in the area produces wide variations in plant densities and yields. Using a seeding rate of 13.5 kgs per hectare, the seed is broadcast before ploughing, producing plant populations that vary from 1,800 to 96,000 per hectare. Because of a lack of extension services in the area, line sowing which produces more uniform plant density had not been introduced. Secondly, significant losses of yields were caused by stalk borer and smut disease. Studies conducted in the area found yield losses of up to

40% of farms affected by the disease and the stalk borer. A third factor which contributed to the low yields was losses caused by birds.

A low yielding, long duration variety of sorghum with a growing cycle of 140-170 days was grown in the area because of its resistance to droughts, pests and diseases. This variety also had the advantage of producing higher yields of straw used for animal feed than other varieties. Thus, 98% of the farmers in the region grew this variety of sorghum.

Because of a shortage of pasture in the area, sorghum was grown mainly to provide stover for the animals during the dry season, although it was also grown for meeting the subsistence requirements of the family. This was particularly so in drought years when the only harvest farmers obtained was straw yield. Table 5.2 shows that in 1987, which was not a drought year, up to 47% of total output value per farm was from straw yield.

Table 5.2 Value of Grain and Straw Yields

Source	Farm Output			Total Output	% of Total
	Kgs per Farm	Std Dev	Range (kgs)	Value (So Sh)[12]	Output Value
Grain Yield	386	453	1 - 2,527	11,580	53
Straw Yield	1729	1490	78 - 9,872	10,374	47
Total				21,954	100

Source: Survey data, 1987

[12] Official and black market exchange rates are reported in Appendix 5.1

The shortage of grazing land in the area was exacerbated by the bunding programme which forced many farmers to start the production of grass in preference to food crops (NWADEP 1988a). This was the case in Upper Botor village near Gabiley where large numbers of farmers allowed pasture to grow in their bunds with yields of up to six tons of hay per hectare. This hay was either sold to livestock traders who transported it to Berbera to feed animals awaiting exportation or stored to feed animals at the farm during the dry season. Given the very low costs involved in producing hay, farmers reported that in drought years it was more profitable and less risky to produce pasture than sorghum.

Sorghum yields were expected to increase under the NWADEP. Yet after more than a decade of project services, average yields obtained by farmers have not increased. Although the project claimed that bunding would raise yields by more than 50 percent (SAR 1984), detailed independent studies carried out in 1980 and 1987 reveal that there was no significant difference between the yields of bunded and unbunded fields (NWADEP 1988a; SOGREAH 1980). Table 5.3 summarises the results of the 1987 yield study.

Table 5.3 Comparison of Grain and Straw Yields Between Bunded And Unbunded Fields, 1987

	Grain Yields		Straw Yields	
	Bunded	Unbunded	Bunded	Unbunded
Mean (kg/ha)	235	226	4,152	4,156
Coefficient of Variation %	115	130	70	86
Standard Error	27	29	293	364
Range	0 - 1,345	0 - 1,450	220-15,040	20-17,240
t-ratios	0.24 (Not significant @ 1% level)		-0.007 (Not significant @ 1% level)	

Source: Survey data, 1987

5.2.3 Livestock Production

Farmers derived a higher proportion of their incomes from animals than from crop production. In a typical year the revenues from animals would be twice the value of farm output. For instance, in 1987 cash income from the animals was So Sh 43,800, while the total output value of crops was So Sh 21,954 (Tables 5.2 & 5.4). As shown in Table 5.4, the sale of milk and ghee accounted

for 66% of total cash revenues from animals. An average cow in the area produced up to 400 litres of milk per six months of lactation period of which 240 litres were sold in exchange for food grains and to meet other cash requirements of the household, while the rest was consumed by the family. Goats' milk was mainly consumed by the household, while sheep's milk was processed to make ghee. But cows' milk was either sold fresh or processed to produce ghee which can be stored for long periods and sold as and when the household needed cash. Ghee-making was common during the rainy season when milk prices were generally low. However, because it coincides with a peak period in terms of labour requirement, most farmers in the area sold their milk produce fresh unless prices were exceptionally low.

Table 5.4 Mean household Cash Revenues from Animals, 1987

Source	Revenue (So Sh)	% of Total Revenue
Milk and Ghee Sales	28,800	66
Animal Sales	15,000	34
Total	43,800	100

Source: Survey data, 1987

Table 5.5 reports animal species owned by households in 1987. Compared with animal ownership in the nomadic areas, herd sizes were much smaller yet their productivity was higher. This was mainly due to the fact that the straw/fodder which farmers feed their animals was superior in terms of nutritional value to grazing in the nomadic areas. Moreover, the easy access of water in agro-pastoral areas also meant that animals were less mobile than in nomadic areas.

Table 5.5 Mean Livestock Ownership, 1987

Species	Number
Sheep	17.55
Goats	10.00
Cows	6.37
Camels	2.68
Oxen	2.54
Donkeys	1.99
Chicken	9.00

Source: Survey data, 1987

Households in the area practised a system whereby some of the animals

together with members of the family were sent to summer pasture in the Haud region or near the border between Somaliland and Ethiopia. Mainly sheep and goats were sent away to search for better grazing. As cattle require water every two days, their movements are much more restricted than other animals. In a typical year up to 20% of household members would be away with the animals (see Table 5.6). However, not all households sent members of their families away with the animals. Those with smaller herds often entered an agreement with their relatives to combine their herds and share the task of looking after them.

Table 5.6 Seasonally Migrant Household Members, 1987

	Mean				% of Total Members
	Male	Female	Children	Total	
Seasonally Migrant	0.50	0.33	0.77	1.59	20
Total HH Members	2.30	2.00	3.40	7.78	100

Source: Survey data, 1987

One major problem for livestock production in the area was overgrazing which resulted from a rapid expansion of cultivation and extensive bush clearance carried out by the NWADEP project. Since the early 1980s hundreds of

hectares of grazing land were turned into arable land, resulting in overgrazing in the remaining areas. This was exacerbated by a massive destruction of trees in the area by half a million Ethiopian refugees based in the region. These factors intensified what was already described by SAR (1976) as an alarming rate of rangeland degradation.

5.3 *Qat* in the Rural Economy

Cultivation of *Qat*[13] (Catha edulis) in the area started in the early 1960s when farmers in the village of Galoolay began to experiment it as a cash crop. Since then it has become the most important cash crop in the North-west and Awdal regions. Many farmers in the area have adopted the cultivation of *Qat* since the 1974/75 drought. Because of its resistance to droughts and the semi-arid environment, farmers who owned *Qat* fields managed to cope well with the drought conditions. When all other crops failed, owners were able to harvest their *Qat* fields and sell at very high prices. This influenced other farmers to start cultivating it. By 1983 more than two-thirds of the farmers in Galoolay had *Qat* fields with one to eighteen year old plants (NWADEP 1983). Although

[13] *Qat* is chewed for its stimulant effect. It is widely consumed in the Horn of Africa and Yemen. In Somaliland up to 90% of the male population and some 5% of women chew it regularly in the afternoons.

it takes several years to reach maturity, cuttings can start as early as the second year.

The success of *Qat* cultivation was contributed by strong domestic demand which maintained its price throughout the year. This results from the fact that *Qat* is both demand and income inelastic: its demand does not change either with incomes or with its price. Because it has become more of a necessity good, the amount of *Qat* consumed does not fall even if its price goes up. Similarly, its demand does not change with income levels, therefore, both the rich and the poor consume certain numbers of bundles irrespective of their incomes and wealth. Indeed, as more and more people took up the habit of chewing, its market continued to expand.

The cultivation of *Qat* provided stable source of income for farmers in the area. In 1983, the annual gross revenue for the average *Qat* owner in Galoolay was about So Sh 110,000 (US$2,200)[14] (NWADEP 1983) which was roughly ten times the combined revenues from crops and animals. Some of this revenue was reinvested in the farm by expanding the cultivation of *Qat* and food crops. Thus, contrary to the government's claim that *Qat* was replacing food crops, the growing of *Qat* was in fact increasing the production of food crops. *Qat*

[14] At the black market rate of 50 shillings per $

owners also invested some of the revenues on building more permanent houses (e.g. tin-roofed huts). Improved living conditions and increased wealth in the area was indicated by second and third marriages among the *Qat* owners in the early 1980s. Many farmers considered *Qat* plants as their most prized assets. As one farmer put it, the plants were "their camels" since *Qat* shares similar characteristics with camels (i.e. resistance to droughts; and wealth and status associated with its ownership). As Samatar (1988) noted many producers also described it as a famine or hunger preventer.

In addition, the cultivation of *Qat* also provided employment to many people both inside and outside the rural sector. In the rural areas, this was because of its labour-intensive operations such as weeding, bunding, pruning and harvesting which require labour input from outside the household (Ahmed 1990). It thus provided employment to labourers whose primary source of income was working on *Qat* farms. It also provided employment to traders and agents, including women whose only source of income was selling *Qat*.

The government's decision in 1983 to ban the cultivation of *Qat* seriously weakened the ability of the agro-pastoralists to cope with crises. By early 1984, all *Qat* farms in the country were destroyed. The banning of *Qat* which was later rescinded in 1990 was essentially a means of punishing local farmers since the ban did not affect the consumption and importation of *Qat* from Ethiopia.

It had a devastating consequence on the rural economy. It denied an important source of income to the growers and others whose livelihoods depended on *Qat*. This was not the first time *Qat* was banned in the country. The colonial government in Somaliland experimented with outlawing the importation of *Qat* from Ethiopia, but failed to control the long border between Somaliland and Ethiopia.

5.4 Food and Livestock Markets

Households in the area used markets in Gabiley and Arabsiyo to sell their produce and live animals in exchange for other goods. As both of these markets are easily accessible to the main market in Hargeisa, the prices of animals and cereals closely followed the prices that prevailed in the reference market at Hargeisa. Thus, given the absence of information barriers and transport problems the markets were spatially integrated.

5.4.1 Food Markets

Grain markets in the area were relatively free and there was no government intervention until the early 1970s when the government created several parastatals which were granted an absolute monopoly over the trade of all major food items. This followed the wave of nationalisation of banks, imports

and wholesale trade in the early 1970s. The Agricultural Development Corporation (ADC) was responsible for the purchase, storage, sale and distribution of sorghum and maize, while the Ente Nazionale di Commercio (ENC) was responsible for the importation of wheat, wheat flour, and rice. A third parastatal was the Pasta Factory which produced spaghetti from concessional wheat. Private traders were prohibited by law to import, store, purchase or distribute food items.

Of these parastatals, the ADC had the most damaging effect on the markets of food crops. It adopted a consumer-oriented policy which penalised producers by fixing procurement prices of maize and sorghum at a level that forced many farmers to shift from cereal production to other crops such as vegetables and *Qat*. Its purchasing prices were so low that in 1980 the fixed prices of sorghum and maize were only about 15% of the parallel market price (SOGREAH 1980). Moreover, the producer price indices reported in Table 5.7 also show that the real producer prices for sorghum and maize continued to fall from 1974 to 1984. To enforce its monopoly and prevent the establishment of parallel markets, the ADC employed enumerators, assisted by local forces, who conducted yield assessments before harvesting to decide the quantity of grain each producer had to sell to the ADC.

Table 5.7 Indices of Real Producer Prices[15] for Sorghum and Maize (1974=100)

Year	Sorghum	Maize
1975	92.1	92.1
1976	88.2	88.2
1977	99.6	99.6
1978	90.5	90.5
1979	73.2	73.2
1980	73.4	73.4
1981	50.7	57.1
1982	51.8	62.1
1983	67.2	82.3
1984	35.8	42.5

Source: Farzin (1988)

The effect of this pricing policy was a substantial fall in the region's total food output. From 1971 to 1977, the total sorghum production fell by 33% from

[15] Because of a lack of producer index for the rural areas, the prices have been deflated by Mogadishu Consumer Price Index

30,000 tons to about 20,000 tons in the North West and Awdal regions which were already deficit in food grains. The local production provided less than half of the total sorghum and maize consumed. The other half was made up by sorghum imported from Ethiopia by nomads on the black market and transfers from southern Somalia. However, because of high transport costs and consumer preference for the white sorghum produced in the north and Ethiopia, the transfer of grains from the south was generally negligible. It was only in drought years that sorghum produced in the south reached markets in the north.

Lack of price incentives was also one of the reasons why many farmers in the north started cultivating *Qat*. Perhaps the large numbers of *Qat* fields established soon after the introduction of government price control was partly in response to this policy. Although increased remittances from family members working abroad provided the necessary investment capital required for growing *Qat* and contributed to its cultivation, it appears that the government's pricing policy encouraged farmers to find an alternative crop which they could sell freely in the market. However, not all farmers responded to this by growing *Qat*. Many of them started growing other cash crops such as water melon which were not covered by government price controls.

As part of the World and IMF structural adjustment, the government finally liberalised food markets in 1984 and allowed private sector involvement in

cereal marketing so that farmers could sell their production surplus in the free market. The role of the ADC was changed to strategic grain storage and price liberalisation, while the operations of ENC was confined to distributing donated food items to public institutions such as schools, hospitals and police. However, prices of sorghum and maize still remained low because of the availability of donated or cheap imported wheat in the local markets. This was because ENC still continued to sell donated wheat and maize at a discount to public institutions, while food aid intended for refugees also entered local markets, depressing food prices.

5.4.2. Livestock Markets

Unlike food markets, there was very little government involvement in livestock markets. They operated in an essentially free market setting. Private traders were mainly responsible for purchasing animals in local markets and then exporting them to the Arabian Gulf. Livestock trade was the only important economic activity that remained in the private sector after the nationalisations of the early 1970s. Government involvement was confined to collecting its taxes. Although it made several attempts to regulate livestock marketing in order to have a greater influence on the activities of private traders, the livestock trade remained largely independent of direct government control. Despite the establishment of a parastatal, the Livestock Development Agency,

similar to the ADC, the government was less willing to take actions that jeopardised the most important source of its foreign exchange earnings.

However, the requirement of livestock traders to remit part of the foreign exchange through the national bank at the official exchange rate may have had some effects on the prices of animals. Samatar (1989) suggests that this had a significant effect on the final price received by the producers which as a result stagnated at about $42 per sheep when the consumer price index (1970=100) rose to more than 1000 in 1984, causing a deterioration of pastoral terms of trade. However, this is not supported by the evidence. Livestock traders remitted a small proportion of their foreign exchange earnings through national banks, although in theory they were required to remit up to 70%. The rest of the foreign exchange was remitted back to the country through the *franco valuta* system. Under this system the traders were allowed to import any consumer goods by using their own foreign exchange. It is true that the sheep price remained at about $42, but what matters here is whether local currency proceeds kept pace with inflation. Again, the evidence shows that livestock prices rose much faster than inflation (Haaland and Keddeman 1984). For instance, from 1980 to 1987 the consumer price index rose four fold, while the price of sheep rose by more than ten times from So Sh 440 in 1980 (SOGREAH 1980) to So Sh 5,000 in 1987 (NWADEP 1988a)

In addition, livestock trade operated in a fairly competitive manner. Despite the fact that the number of traders involved in livestock markets was limited by the large capital required, there was no indication of a high degree of market concentration (i.e. a high proportion of total trade being controlled by a few traders). Although a high degree of market concentration does not prove the existence of collusive pricing, there are theoretical reasons to suggest that the presence of a few traders each with a large market share is associated with non-competitive market pricing. However, in the late 1970s, many small traders entered into livestock marketing, reducing significantly the market share of the existing livestock traders. Initially, the new entrants were faced with obstacles such as the lack of capital and skills required in livestock export, but finally they overcame these obstacles. Thus, although the government always accused the private traders of speculative behaviour, no individual trader was in a position to influence livestock prices significantly.

Furthermore, there were no barriers to price information. Despite the lack of mass-media market intelligence, market information was communicated through personal contacts. Herders obtained livestock prices regularly which helped them decide when and where to sell their animals. They collected this information whilst visiting village markets. For instance, when a member of a settlement (*reer*) returns from a visit to a village or a town, the first thing he is asked about is the market information. This constant information gathering

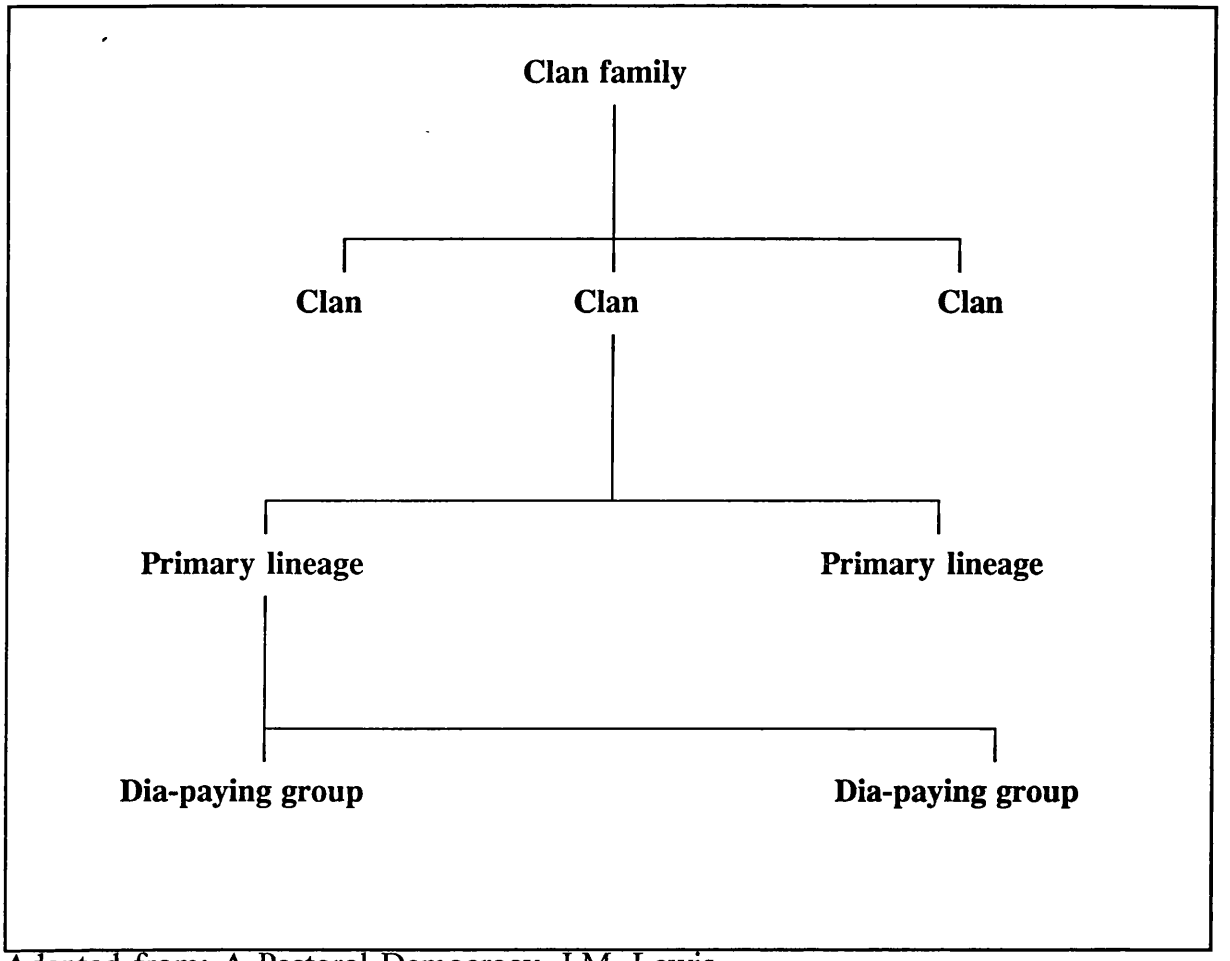
kept them well informed about the market situations.

When producers take their animals into a market a *dillaal* acts as a middleman between the producer and the trader. Although the role of *dillaals* in marketing is somewhat controversial, their services are still used by producers because of two reasons. Firstly, producers consider their knowledge of the market and bargaining process indispensable. *Dillaals* facilitate the exchange process and perform an essential task in bridging the gap between sellers and buyers. They also act as information brokers, telling producers who is credit worthy and who is not since some of the traders pay only half of the money at the time of the sale. Secondly, herders feel socially obliged to help those who earn a living as *dillaals*. For every sale they make, *dillaals* are paid a fixed commission which is generally not greater than 10% of the price of the animal. Yet *dillaals* are sometimes viewed with suspicion and accused of making a profit at the expense of their client by reporting less than the amount offered for the animals and pocketing the difference. This is mainly because of the fact that price negotiations are conducted secretly in a trading language and herders are only informed by the *dillaal* when prices are agreed. Therefore it is possible for unscrupulous *dillaals* to defraud herders in this manner if the herder is not present when the money is paid by the trader. However, since they have to rely on their reputation as brokers to attract future clients, they are cautious about defrauding producers.

4.4 Social Networks and the Moral Economy

The Somali social and political structure consists of clan-families which sub-divide into clans, sub-clans, primary lineage, and dia-paying groups (Figure 5.3). The dia-paying group is the most stable political and social unit with a membership from around one hundred to several thousand men. The members of the dia-paying groups have a contractual agreement to support each other and to share payments of blood money. As the term *dia* (blood money) paying implies they have collective responsibility for the payment and receipt of compensation of the acts committed by, or against, their individual members (Lewis 1961). Compensation is paid for homicide or physical injuries. For blood-compensation the rate is fixed at 100 camels (or their equivalent in other animals or cash) if a man is killed, or 50 camels if a woman is killed. But compensation for injures is assessed by religious leaders, using camel standards.

Figure 5.2 The Structure of Somali Clan Organisation



Adapted from: A Pastoral Democracy, I.M. Lewis.

The dia-paying groups also have a common agreement to help each other during food crisis. They have a very strong sense of solidarity and a high degree of cooperation which closely links the members of the group. Although this is less formal than blood money payments, members have an obligation to help the destitute and those who are in severe hardship during crisis.

In times of crisis, each clan member is expected to observe the moral system

or code of conduct because breaking community norms can have serious consequences for the individual or group involved. The importance attached to observing community norms and moral principles is indicated by many poems and stories in the Somali oral literature which warn people against opportunistic actions that may damage the social reputation of their group or clan. A particular poem often cited to warn those suspected of breaking customary rules refers to how the *Sub* clan[16] lost its nobility. This is based on a story that *Sub* members consumed carcasses of dead animals (i.e. meat that had not been ritually slaughtered) in a drought period when there was still some food around. The poem warns others that the *Sub* lost their nobility in this drought by eating forbidden food and thus breaking the community norm (*Sabta waxa Midgaha looga dhigay saban abaareede; way nala sinnaayeen markay samadu toosnayde*). Other poems, on the other hand, praise those who observe customary rules and fulfil their obligations in times of crisis. In one of his poems (Cahill 1986: 39), Mohamed Abdulla Hassan (the Mad Mullah), praised the support one receives from a relative during a famine:

> Who welcomes you like a kinsman in your day of need
> and who, at the height of the drought, does not bar his gate against you,
> Is not he who never fails you in your weakness one of the brethren?

[16] These groups practice skills, such as hairdressing, ironwork, and shoe-making, despised by the Somalis. Intermarriages with the "noble" Somalis and full participation in Somali social relations are prohibited.

Specific forms of transfers practised in the rural economy include *Xoolo Goyn* (giving animals) and *Zakaat* and alms gifts. *Xoolo Goyn (Xoolayn)* involves giving breeding animals to destitute families who have lost their animals during droughts. This often takes place between dia-paying members and close relatives. *Zakaat* is a form of payment that is payable by every Muslim who lives above the subsistence level. They are required to distribute about 2.4% of their total capital per year among the poor, the old and the destitute. *Zakaat* is often paid to close relatives who are entitled to claim it. Alms which takes different forms is provided as gifts mainly for immediate consumption. However, these transfers do not carry any obligation to reciprocate.

In rural Gabiley, there are three additional forms of mutual aid in agricultural and related activities. These included: (1) *Guus* which means helping with farm activities such as weeding, thinning, harvesting, and threshing. In these activities, there is no remuneration, but the farmer provides them with food and *Qat*. Groups of kinsmen and neighbours would normally perform these tasks. (2) Sharing oxen with those who own only one ox to join up and form a team. (3) Lending oxen for land preparation and weeding, and (4) doing community work such as constructing and maintaining water points and schools.

4.5 Conclusions

Rural households in the Gabiley district adopted a system of farming which suited the soil and climate in dry-land conditions. This involves raising animals as well as growing food crops such as sorghum which is resistant to the frequent droughts in the area and at the same time provides fodder for the animals during the dry season. The government development programmes intended to improve farming in the area only added to the existing soil erosion and overgrazing problems by using inappropriate technology and by neglecting animal production which played a key role in the rural economy.

On the other hand, the adoption of improved farming practices was discouraged by the governments pricing policy which favoured consumers and penalized rural producers. For more than a decade the producer prices of the main cereal crops were fixed at no more than 15% of the free market price, forcing many producers to grow non-food crops such as *Qat*.

The farmers' adaptive response to the government's policy and the recurrence of droughts in the area was increased adoption of *Qat* which was introduced in Gabiley in the late 1960s. The cultivation of *Qat* in the area was highly successful. Because of its growing demand and its ability to produce high yields even in drought years, it was very attractive to rural producers. Many

farmers sold their animals and other assets to invest in the cultivation of *Qat*. However, the government's decision to ban it in 1984 had a devastating impact on the rural households, making them even more vulnerable to droughts and famine.

CHAPTER 6. THE EFFECTS OF THE WAR AND THE SUBSEQUENT CRISIS

6.1 Introduction

The war between the Somali National Movement (SNM) and the regime of Siyad Barre broke out in May 1988 when the rebels launched a surprise attack on the government troops based in the cities of Burao and Hargeisa. The government's response was the indiscriminate bombing of the cities, towns and villages of Somaliland, resulting in mass deaths and the displacement of tens of thousands of people.

This chapter is about the effects of the war on rural households and the subsequent crisis caused by the displacement of the population. It concentrates on the loss of incomes and assets, the disruption of markets and trade, and the population displacement. The ensuing social and health crisis and how it affected the ability of the households to cope with the situation is also discussed.

Making an overall assessment of the effects of war in general is relatively difficult due to its unique characteristics compared to other disasters. For example, it is difficult to isolate the effect of war from other factors, such as

drought, which may occur at the same time. Similarly, some of the effects may not be noticed long after the hostilities have ended. However, despite these difficulties, it is necessary to know the effects of war on such key factors as living conditions, incomes, and other economic indicators, and the extent to which these effects can be attributed to war.

6.2 Background

In order to understand the nature and the causes of the 1988 war and the subsequent tragedy, several events which precipitated it and contributed to the development of the crisis need to be highlighted. The first was the hasty union of the two Somali states, the republic of Somaliland and the Italian Trust Territory, to form the Somali Republic in 1960. In this union, the legislative bodies of the former colonies were merged to create a new Somali parliament based in the southern city of Mogadishu, which became the national capital. Southern leaders held all the major posts in the new government and the majority of seats in Parliament. In the interest of the union, Somaliland representatives accepted most of the conditions demanded by southern leaders. However, more than 70 years of two different colonial systems of government meant that there were fundamental differences between the former colonies that proved almost impossible to overcome. These differences were cultural, political, administrative, economic and social.

As early as 1961 there was widespread discontent with the union in Somaliland. In a referendum for the constitution on 20 June 1961, Somaliland voted against it. Furthermore, in December of the same year an unsuccessful coup aimed at rescinding the act of the union was staged by a group of junior officers. Although these two events clearly showed that northerners were dissatisfied with the union, southern leaders who had the majority of the seats in both the government and parliament did little to address these grievances. Instead, they adopted measures aimed at enforcing full integration, which only added to the problems and further alienated the northerners.

The second important watershed was the military coup in 1969 which brought the dictator Siyad Barre to power. As soon as he was in power he devised a policy of repression against the people of Somaliland, whom he saw as a threat to his regime. He adopted economic policies that penalised trade and other economic interests in Somaliland and increased the imbalance of development funds and aid distribution between north and south. For instance, in 1986 less than 5% of the development aid budget was allocated to the north.

The third antecedent of the crisis was the 1977-78 Ogaden war which caused a flood of refugees from the eastern regions of Ethiopia following the defeat of the Somali army. By 1979 there were 1.3 million refugees in the country (Cahill 1986). More than half of these were settled in Somaliland. In the North-

west region alone more than half a million refugees were settled in 12 camps. This influx intensified pressure on already limited resources and services, leading to resentment among the local people. Tension was increased by the government's policy of recruiting refugees into the army and using them against the Isaaqs. Land and property seized from local people were given to the refugees and the former fighters of the Western Somali Liberation Front (WSLF). The Isaaqs, who form 75% of the population, protested against this oppression and in 1981 formed the Somali National Movement (SNM). Nevertheless, the formation of the SNM only intensified the regime's repression and plunder of the Isaaqs. From 1981 onwards, SNM fighters engaged in a guerilla war along the border and sometimes infiltrated into the mainland to carry out attacks against military and security forces.

In 1988 the SNM launched a surprise attack against government forces stationed in the two cities of Hargeisa and Burao. The attack followed an unprecedented peace accord between the two embattled dictators of Somalia and Ethiopia. The response by the government to the SNM invasion was a wholesale, indiscriminate aerial and ground bombardment of towns and villages in what was described as an act of genocide (The Guardian 1989). This forced almost the entire Isaaq population to flee from the country and seek sanctuary in Ethiopia. Three years later, the dictator was toppled when his troops were defeated. The SNM captured Berbera on 29 January 1991 and a few days later

liberated the rest of the country. This was followed by the declaration of the independence of Somaliland at a congress held in Burao on 18 May 1991.

6.3 The Effects of the War

The war had a devastating impact with far reaching social and economic consequences for the rural communities. It caused population displacement and loss of life which resulted from summary executions, aerial bombardments, ground attacks and the destruction of villages by government troops. It also caused the loss of more than half of the country's livestock, making thousands of pastoralists destitute.

Other effects were the destruction of markets and disruption of food production which had virtually ceased during the war and the destruction of tree crops and irrigation equipment on horticultural farms.

6.3.1 Loss of Life and Displacement of Population

Thousands of herders and farmers were killed in the war. Although it is difficult to get a correct estimate of these deaths in a country where statistical information of any kind is lacking, it is thought that up to 20,000 died in the rural areas. This represents about 20% of the total number of deaths reported

to be about 100,000 throughout Somaliland (The Guardian 1993). These deaths were the result of the summary executions, aerial bombardments, ground attacks and destruction of villages carried out by government troops. Mass graves and corpses found in many towns and villages after the war are testimony to the scale and brutality of the government troops against their own people. In his report *Why Somalis flee*, Robert Gersony (1989) argued that the troops carried out what appears to be systematic attacks, targeted at farmers and nomads, their livestock, watering points and the grazing areas near their villages, killing many of the residents and forcing the survivors to flee.

Fully mechanized special troops known as the "Isaaq Exterminating Wing" (Dabar-goynta Isaaqa) were largely responsible for these brutal acts in rural villages. Recruited mainly from the refugees and the former fighters of the Western Somali Liberation Front (WSLF), they had the task of implementing the government's policy of punishing nomads and farmers and destroying rural lives and livelihoods. They destroyed or poisoned wells (vital for the pastoral economy), seized livestock and burned entire villages to deprive the rural population of its basic means of livelihood (Amnesty International 1988). Herders and farmers in particular were targeted as they were perceived to provide support base for the SNM. This widespread destruction was carried out

in the spirit of General Morgan's[17] infamous "death letter" which advocated the implementation of draconian measures, including the destruction of villages and towns in the territory situated between the bases of government troops and the Ethiopian border.

Mass displacement of the rural population also took place during the war. Within a few months of its outbreak, almost the entire Isaaq population was displaced and forced to seek refuge in eastern Ethiopia where relief camps were established. By August 1989, about 361,000 refugees were registered in five camps in eastern Ethiopia (Table 6.1).

[17] General Morgan was the commander of the armed forces in the north and the son-in-law of Siyad Barre

Table 6.1 Refugee Population in Eastern Ethiopia, August 1989

Camp	Population
Hartisheik A	167,000
Hartisheik B	53,000
Camp-Abokor	65,000
Rabasso	24,000
Daror	52,000
Total	361,000

Source: Toole and Bhatia (1992)

6.3.2 Loss of Assets and Income

One of the most devastating effects of the war was the loss of livestock. Although the exact number of animals lost, due to the conflict, is not yet known, it is estimated that more than half of the country's total livestock population was lost as a result of the war and other related causes (SEPHA 1991). Moreover, a comparison of livestock holdings before and after the war also shows a drastic fall of livestock holdings. A survey conducted by Save the Children Fund (SCF) in 1991 reports average livestock holdings of 65 small stock, 10.8 camel and 1.3 cattle (SCF 1992) as compared to pre-war average

holdings of 100 small stock, 25 camels and 5 cattle[18]. This represents a 35%, 57% and 74% fall from pre-war average holdings for different livestock species respectively. In addition, most of these households have holding sizes that are well below the minimum viable stocks needed for meeting subsistence requirements and maintaining herd size. A large number of rural households also lost all of their livestock and became destitute. These households depended on food aid distributed in refugee camps in Ethiopia (Ryle 1992).

Several factors account for these high losses in livestock. First, the government troops and armed militias targeted watering points and villages in their attacks, seizing large numbers of animals and killing many others. The confiscation of animals took place even before the outbreak of war as many farmers were accused of being SNM sympathizers. The troops also destroyed water sources by blowing up or draining water reservoirs. In some areas open wells were poisoned, while others were contaminated with corpses (Africa Watch 1989).

Secondly, extensive planting of mines in most of the rural areas also accounts for high animal losses. An estimated 2-10 million mines (Warsidaha Somaliland 1993) were planted in Somaliland in what has been described as terror mining.

[18] The pre-war average holdings are based on studies conducted by the NWADEP and SOGREAH Consultants in the early and mid 1980s, thus it may possible that average holdings were lower than these figures.

The intention of this strategy was to force the population to flee and render the land extremely dangerous and uninhabitable (African Rights and Mines Advisory Group 1993). This had a devastating impact on the pastoralists who had to use heavily mined wells. As most of the grazing land and routes to markets and villages were mined, nomads were forced to use their animals as an "early-warning" for land mines, resulting in loss of hundreds of animals (ibid). Originally, the land mines were used as a counter-insurgency strategy against the SNM, but during the war they were planted indiscriminately in and around grazing areas, water points and main routes.

A third factor which contributed to this high loss of livestock was the lack of veterinary services. Veterinary drugs were either looted or destroyed. Consequently, animal health deteriorated and there were widespread outbreaks of tick-borne diseases which killed many animals. Inadequate veterinary services was a major problem even before the war because of curfews and restrictions imposed on the movement of people and transport.

Finally, another contributing factor was the distress sale of livestock by pastoralists. A sudden fall of livestock prices during the war led pastoralists to increase their sale of animals to meet their subsistence requirements. Livestock markets in eastern Ethiopia were flooded with animals and the terms of trade between livestock and food grain fell sharply. The pressure to sell or slaughter

more and more animals, including breeding stock, had increased because the number of people to be supported from a given herd size had increased and the average family's subsistence requirements were no longer met from the normal peace time sales of livestock and livestock products such as milk, ghee and hides.

Agro-pastoralists, in particular, suffered higher losses than nomads. The 1992 survey shows that up to 23% of farming households lost all of their animals during the war, while the remaining households suffered losses reaching up to 80%. The agro-pastoralists were hit hardest because of their close proximity to the main towns and bases of government troops. They also lost larger numbers of animals after they migrated to the Haud region near the refugee camps because their animals were not adapted to the harsher environment of that area.

Another effect of the war on agro-pastoralists was disruption to crop production, since farmers were forced to abandon their farms. Agricultural land remained uncultivated from 1988 to 1991 when farmers returned to their land and started cultivating. Even then most farmers were unable to resume cultivation because of land mines and the lack of seeds and oxen to plant their farms. In some of the best agricultural areas in Gabiley and Arabsiyo the land was so densely mined that farmers were not even able to graze their animals (African Rights and Mines Advisory Group 1993). Moreover, in the

horticultural areas, irrigation equipment such as pumps and pipes were looted, and wells and tree crops destroyed. For instance, in Arabsiyo, a town 20 miles west of the capital Hargeisa and one of the most important horticultural centres, 90% of its horticultural farms were destroyed after the 20,000 residents who lived in the town were forced to flee. By 1991 only a small number of farmers resumed vegetable production on their farms. The rest of the horticultural farmland remains uncultivated because of the lack of seeds and the acute shortage of irrigation equipment (Coulton et al 1991).

6.3.3 Disruption of Markets and Trade

Another effect of the war was the destruction of market centres and the mining of transport routes which virtually brought trade to a standstill. This coincided with the closure of Berbera port for animal exports from the second half of 1988 to 1990 (Table 6.2). Because market exchange was central to the survival of rural households, the collapse of markets had a devastating effect on them, forcing many to dispose of large numbers of their animals. Soon after the outbreak of war the terms of trade between livestock and cereal grain fell sharply. For example, in the second half of 1988 an average goat could barely buy 20 kgs of cereal grain as compared to 100 kgs in 1987. This represented a drastic fall of the terms of trade between small stock and cereal grain. To acquire the same amount of grain, 5 times more goats had to be sold in 1988

than in 1987. There was a similar fall in the terms of trade between cattle and cereals, though it was less drastic than that of small stock and cereals. Although all animal prices fell during the war, the relative fall of small stock prices was substantially greater than that of other animals.

Table 6.2 Livestock Exports, 1981-92

Year	Sheep	Goats	Cattle	Camel
1981	685	680	116	15
1982	730	719	157	15
1983	559	557	54	8
1984	339	337	8	4
1985	718	719	43	7
1986	567	567	56	9
1987	579	579	52	20
1988	201	203	27	11
1989-90	0	0	0	0
1991	140	60	20	0
1992[19]	150	5		

Source: Elmi, A. (1991); Survey data, 1992

Despite the collapse of livestock exports due to the closure of Berbera port and the disruption of markets, several other important factors contributed to the fall

[19] These figures go up to the end of August.

of livestock prices. Firstly, the demand for meat almost effectively collapsed as hundreds of thousands of local consumers were made refugees by the war. Secondly, there were increased sales of animals by pastoralists. This resulted mainly from the fact that they had to support relatives who had fled from the urban areas. The distribution of food rations in the refugee camps was not fully established until 1989, so for about a year the pastoralists had to support their relatives. This forced them to sell more animals to feed larger families. Even after the refugee camps were established some of the refugee families still depended on the support of their relatives in the rural areas. Furthermore, the local markets were also flooded with livestock sold by Ogadeni nomads who were also affected by the closure of Berbera port.

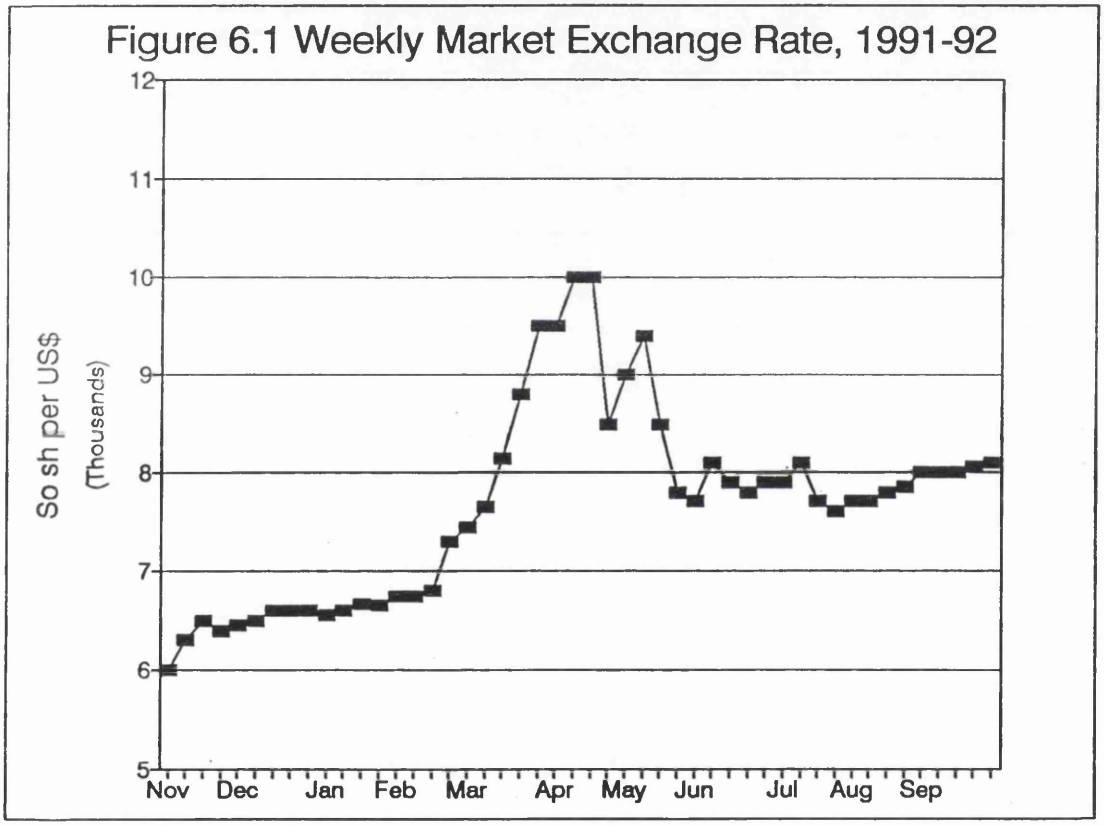
A third reason why animal prices fell drastically was because of the poor health of the animals caused by the absence of veterinary services. There was an epidemic of tick borne diseases which affected most herds in the region. Overcrowding and shortage of pasture also added to the problem. During the war, the pastoralists abandoned their traditional grazing lands in Somaliland and restricted their movements to the Haud region. More than 10 million animals were estimated to have gathered in the region during the conflict, causing a serious shortage of both water and pasture. Thus, the animals offered for sale were often weak and in poor condition, which further reduced their market price.

The collapse of the banking system during the war constituted another major difficulty. The lack of a central bank and control of the money supply caused the Somali shilling to lose its value against foreign currencies. The situation was further exacerbated by the fact that Somali shillings continued to be printed by some of the Somali faction leaders. As a result, the exchange rate fell from 200 So Sh to the US dollar in late 1988 to 8,000 So Sh in mid 1992. The exchange rate was also characterised by high fluctuations, contributing to uncertainty and instability in the food and livestock markets.

Animal prices improved when the export of animals resumed in 1991. In the second half of the year, private traders exported about 200,000 small stock and 20,000 cattle to Saudi Arabia via Yemen. But the prospect of a quick resumption of livestock trade was damaged by the presence of brucellosis disease in some of the animals exported to Yemen, causing large numbers of animals to be turned back. Nevertheless, traders still managed to export large numbers of animals until early 1992 when the port was closed again because of a conflict between clan militias in Berbera.

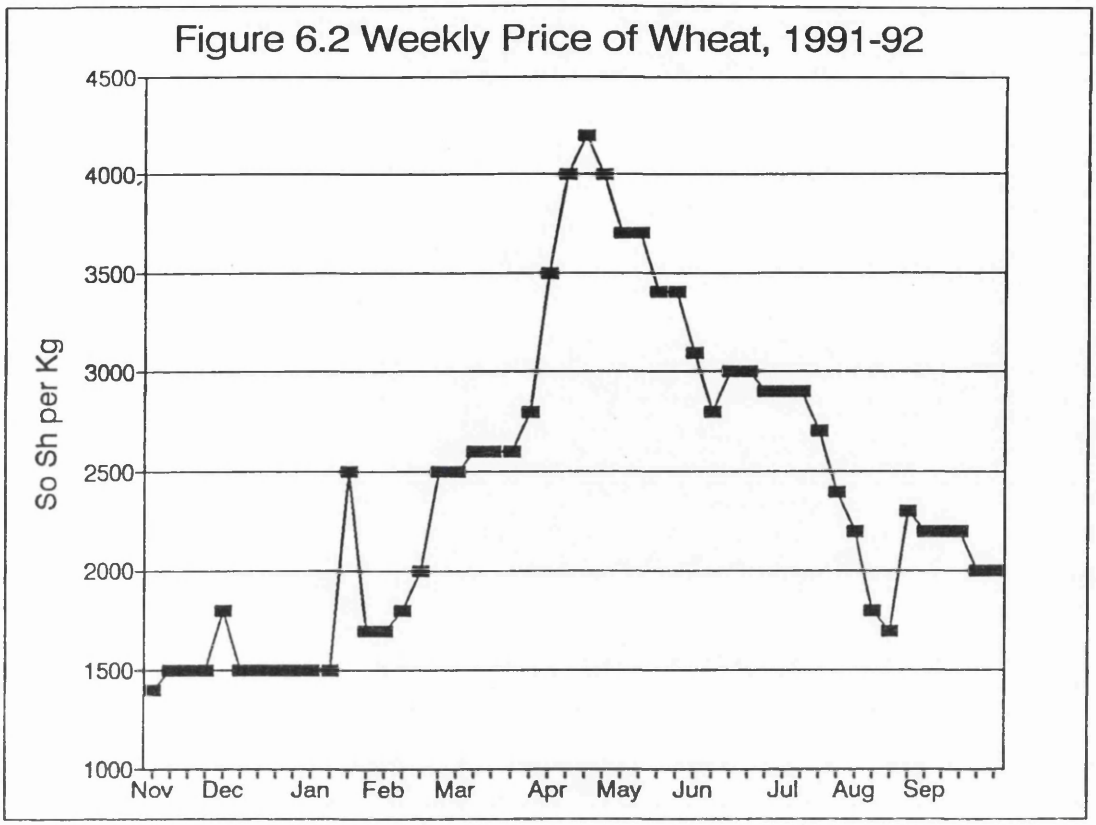
The Berbera conflict, which lasted from March 1992 to September of the same year, took place at a critical time when markets were still recovering from the disruptions caused by the war. The effect of this conflict on the markets was a sudden depreciation of the Somali shilling from 6,800 to the US dollar in

February 1992 to So Sh 10,000 in April 1992 (Figure 6.1). Food prices also rose proportionately higher than the exchange rate depreciation. The price of wheat[20], for instance, rose by 165% from the first week of February to the fourth week of March 1992 (Figure 6.2). Similarly, wheat flour and sugar prices rose more than 88% for the same period (Figures 6.3 & 6.4).

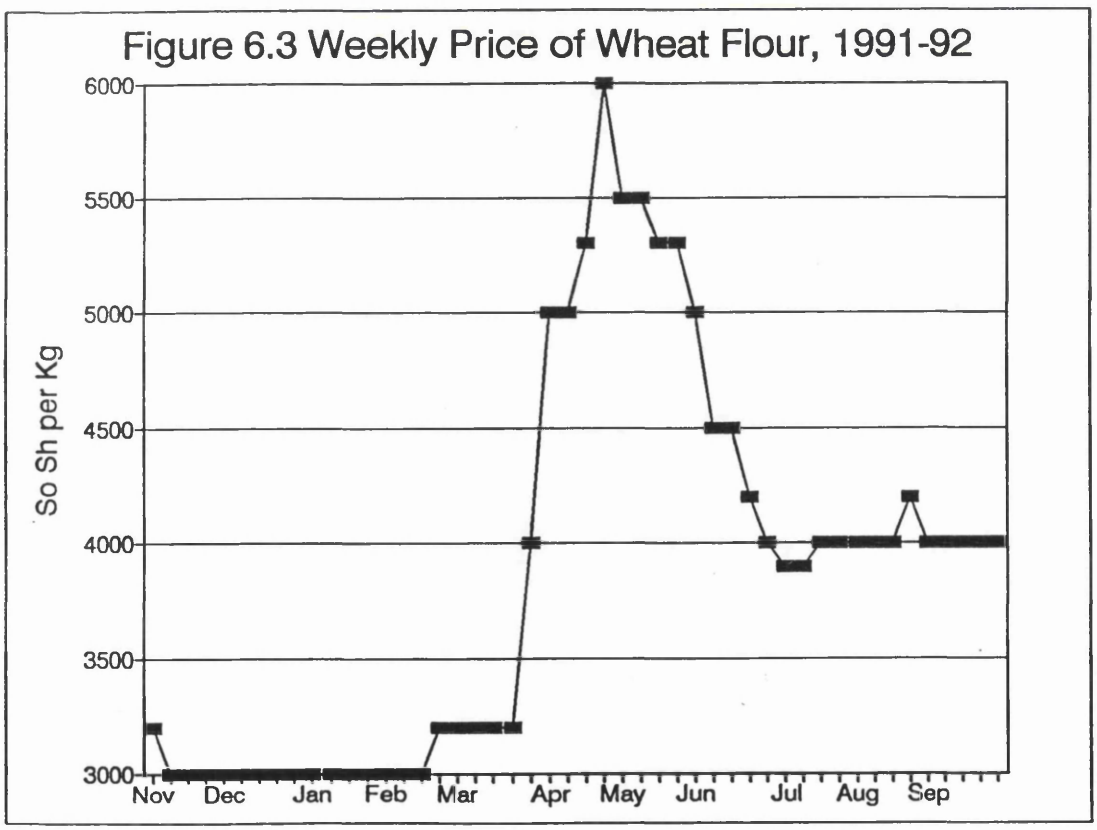


Source: Survey data, 1992; Care International

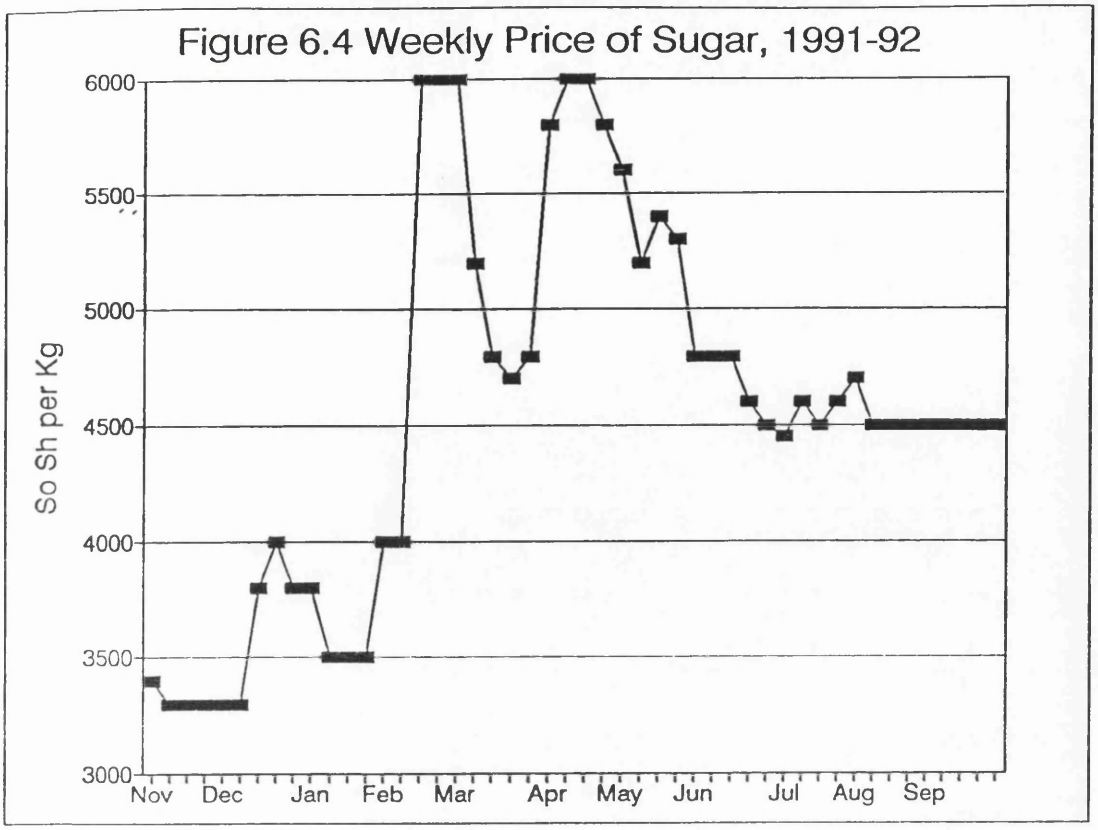
[20] Wheat, which is still distributed in the refugee camps, has become the main staple food in rural areas since 1988.



Source: Survey data, 1992; Care International



Source: Survey data, 1992; Care International



Source: Survey data, 1992; Care International

Although traders were importing food from Djibouti during this conflict, they were discouraged by the food monetisation programme of Care International from importing sufficient quantities required to stabilize prices . This programme, which was started just before the Berbera conflict, caused uncertainty in local food markets. Many traders suffered significant losses when Care International imported large quantities of food and sold at prices lower than those prevailing in the local markets[21]. Large quantities of food looted

[21] This was due to the fact that prices were set by the World Food Programme several months before the first shipments arrived and Care International representatives were not able to change prices without permission from WFP headquarters.

from their stores were also released on to the markets, depressing prices further. The main drawback of this programme was the lack of proper planning and coordination. For example, private traders were not informed of the type and size of food aid supplies, their selling prices or the timing of their release. Nor was the new administration in Hargeisa informed in detail about the food aid programme. This state of uncertainty was partly due to the fact that Care International and the WFP maintained large food stores in Djibouti, which were intended for the food monetisation programme in Somaliland. Constant speculation on the likely effects of this programme on local food markets prevented traders making long term plans with respect to food imports.

6.4 Destitution and Crisis

As stated above, significant numbers of rural households became destitute, especially those households which had very low asset status at the beginning of the war. While households which preserved some of their animals have a good chance of recovering from the crisis, those who lost all their productive assets have little or no chance of getting back to their way of life. Health and social crises have contributed to the high level of destitution. For instance, a sudden increase in social obligations during the war forced many households to sell their animals. In fact, meeting such commitments accounted for as much as half the annual expenditure of many households.

6.4.1 Destitution

Not all rural households were affected by the crisis in the same way. While some of the them coped and emerged with some of their assets intact, others lost all their assets and became destitute. Those who were more vulnerable disposed of their animals earlier and, as the crisis deepened, moved to the relief camps and lived there, while others lived outside the camps.

Up to 23% of households sampled were classified as destitute. However, this classification is not based on conventional criteria which concentrate on ownership of physical assets. It is based on criteria developed and used by the local people themselves. which takes into account not only the ownership of physical assets but more importantly other sources of income and claims on relatives and other households. It also takes into account household characteristics such as the dependency ratio and size of the household. This means a household that does not own any assets but receives remittances from relatives working abroad would not be classified as destitute, whereas a household that owns a few physical assets but has a high dependency ratio would be classified as destitute. This system of classification is used by the local people to decide those who should pay blood-money compensation.

Why did some households slide into destitution earlier than others?

Understanding the differential vulnerability of households to the crisis requires the examination of pre-crisis household asset and income structures. Table 6.3 compares the animal ownership, crop production and household characteristics of destitute households (*Caydh*) with dia-paying households (*Baha Gal*) before the war. It shows that those who became destitute during the war owned less than half the average livestock units of the dia-paying households, although there was little difference between the output values from farming. This means, other things being equal, that destitute households derived a greater proportion of their income from crop production than other households. In other words they relied more on farming than animal production. Thus the loss of farming income during the war had a greater effect on them.

Table 6.3 A Comparison of Destitute and Dia-Paying Households' Farm Incomes, Animal Ownership and Household Characteristics Before the War

	Destitute Households (n=17)	Dia-paying Households (n=56)
Farm Output and Animal Ownership		
Livestock Units[22]	6.24	13.7
Total Farm O Value (So Sh)	20,472	22,266
Household Characteristics		
HH Size	8.9	7.8
Dependency Ratio	0.54	0.56
Adult Men	2.47	2.34
Adult Women	2.3	2.02
Children	4.1	3.39
Mean Age (HH Head)	52	47

Source: Survey data, 1987 & 1992

[22] 1 camel = 1.3 LU; 1 cattle = 0.7 LU; 1 donkey = 0.4 LU; 1 sheep = 0.08 LU; 1 goat = 0.08 LU.

There were also other differences in household characteristics, which may have contributed to the differential vulnerability. Although there was no difference in the dependency ratio (i.e the ratio of active adult members to total household members), destitute households were larger in sizes than dia-paying households. The problem facing larger families during a crisis when there are no employment opportunities is not just feeding too many people but also meeting all of their social obligations. For instance, in the case of blood money payments, all male members in the family, including children, are counted. Unless a household reaches a stage where members classified as destitute, they have a social obligation to meet fully all the payments and contributions their dia-paying group deems necessary as and when they arise. Moreover, the average age of household heads among the destitutes was higher than in other households.

A Comparison of remittances received in 1992 also shows that destitute households, which had relatives working abroad, received much lower remittances than other households (Table 6.4). Consequently, destitute households which resumed growing *Qat* have planted less than half the number of plants grown by dia-paying households.

Table 6.4 Remittances and Investments in Qat Cultivation, 1992

	Remittance		*Qat*	
	% Receiving	Amount (So Sh)	% Cultivating	No of Plants
Destitute Households	29	1,310,000	41	1,071
Dia-paying Households	30	2,084,706	52	2,105

Source: Survey data, 1992

6.4.2 Social Crisis

Ironically the community insurance and transfer systems which played important roles in the collective coping strategies of households have also contributed to the crisis and destitution among some of the rural households. The blood money payment, for instance, which played an important role in preventing and containing localised conflicts, also forced many households to liquidate some of their productive assets. So did contributions to the war which again was a community rather than individual decision.

6.4.2.1 Blood-money payments

The payment of blood money (*Mag*) and other compensation by rural households increased sharply during the war. All dia-paying households (*Baha Gal*) interviewed in the 1992 survey reported paying significant amounts of blood money for the last twelve months. They paid an average of So Sh 140,109 which in 1991/92 terms was equivalent to at least a goat or sheep. At the same time another 39% of households still owed almost twice the amount they had paid (Table 6.5). The amounts they paid varied widely depending on the size of their dia-paying group, the number of compensations and the number of male members in the households. For instance, households belonging to smaller dia-paying groups and with larger numbers of male members paid much more than others. This appears to have been the case for most of the destitute households which continued to pay blood money until they were no longer able to pay it.

Table 6.5 Blood Money Payments, October 1991-September 1992

	Amounts Paid (So Sh)	Amounts Due (So Sh)
Mean	140,109	245,773
St. Dev.	183,771	437,137
Min	350	21,000
Max	900,000	2,100,000
No of HH	56	22

Source: Survey data, 1992

Increased incidents during the war were responsible for high blood money payments. The absence of effective central authority in the refugee camps and increased violence and lawlessness in the area led to many killings and injuries. This was exacerbated by the proliferation of weapons in the area. Although most of the killings and injuries were committed by freelance bandits, the absence of a central authority to deal with such cases meant that their dia-paying groups were collectively responsible for the damage they caused.

Changes in the terms of blood money payments introduced during the war also put additional pressure on rural households. Because of the fear that internal

conflict would deflect attention away from the common struggle against the regime, elders constituted emergency laws demanding that outstanding blood money to be settled within a short period of time. Thus many households were under pressure to meet these requirements as soon as they arose. Normally, families would be given sufficient time to settle any outstanding blood money. Although the system survived during the war, arrears in blood money payments forced many households to default on payments for the first time, jeopardizing the whole system.

6.4.2.2 Contributions to the War Effort

A further social obligation households had to meet during the war was the contribution to the war effort and the struggle between the SNM and government troops. Two types of contributions were required from individual households. Firstly, a typical family was required to send a male member of fighting age to join the SNM forces[23]. If, however, for various reasons, a family was not able to meet this requirement, they had a second option of providing at least one ox or camel, in addition to other contributions. Secondly, one sheep or goat, or their equivalent in cash, was also required from each

[23] The SNM relied heavily on the recruitment of fighters from nomads and agro-pastoralists. ocally known as *Gaas Dhegoole* (the Deaf Brigade), which refers to the fact that they had no ɔrmal military training, they formed the best fighters in the movement.

household at least once a year.

These contributions were decided by a committee of elders in every dia-paying group in consultation with a council of elders which had the overall responsibility of coordinating the recruitment of SNM fighters and the collection of contributions. While dia-paying households were able to meet both demands, destitute families were only able to contribute men to take part in the fighting. In fact all destitute households reported that members of their families took an active part in the fighting. Even early in the war when these households still had animals they still preferred to send male members of their families to the war rather than donate animals.

Moreover, a further requirement was the ownership of rifles by rural households. This was made necessary by the security situation. Having sustained heavy losses as a result of attacks by government troops who sometimes crossed the border between Ethiopia and Somaliland, most of the households were forced to purchase their own guns to defend themselves in the event of war. Deteriorating security in the area and increased raids on animals also made it necessary for households to own rifles. For example, by the end of 1992 as many as half of the households in the survey area still owned rifles, while another one-third reported selling their weapons just after the end of the war.

6.4.2.3 Women in the Crisis

The crisis had a differential impact on men and women among the rural households. There was a significant increase in the number and type of tasks performed by women during the crisis. As men became increasingly involved in community level activities associated with the war, women were forced to do tasks for which men were traditionally responsible or which had been shared by both men and women. As a result of the crisis, women took responsibility for a whole range of new activities such as queuing to collect food rations, fetching water from distant sources and engaging in petty trading to supplement their incomes. However, two types of activities were particularly demanding and time consuming. The first was obtaining food rations from the refugee camps where they queued for long hours on distribution days. Because of poor organisation of the system this often took a very long time.

The other new demanding activity, for which women were responsible, was collecting water which also took up a significant part of their time. Because of the severe water shortage in the refugee camps where households received as little as one litre per day per person for very long periods (Shoham, et al 1989) women hauled water from distant dams and ponds. In some households, women were spending as much as half of their time hauling water from these sources to their homes. As a consequence they had less time for other important

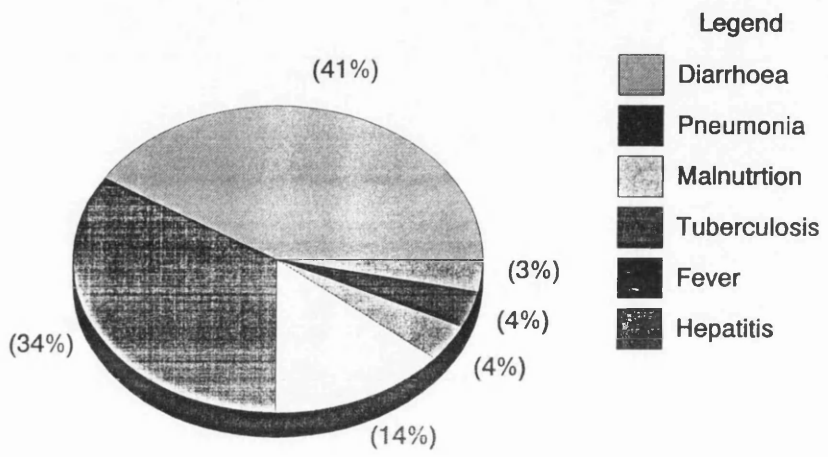
activities such as child care and animal husbandry. This problem was accentuated by increased illness among household members, particularly those who lived in the camps, which further reduced the amount of labour available for household activities.

6.4.3 Malnutrition and Health Crisis

Excess mortality and deterioration of the nutritional status of the refugees were reported in the first twelve months of the crisis. Within the first few months of the war, there was already a high level of malnutrition and increased incidence of disease. In one of the first reports about the situation of the refugee camps, commissioned by the Save the Children Fund, Shoham et al (1989) wrote that "in the space of few months ... a healthy and resourceful population has been devastated by malnutrition and disease". From August 1988 to July 1989 the crude mortality rate was estimated to have been 46 per 1,000 persons, while the under five mortality rate was 152 per 1,000 children (Toole and Bhatia 1992). The crude mortality rate peaked in February 1989 at around 28 deaths per 1,000 people per month. The excess deaths were caused by the increased prevalence of infectious diseases and the breakdown of sanitation in the refugee camps. Figure 6.5 shows that the most common cause of under five deaths was diarrhoeal diseases. Poor sanitation in the camps and inadequate water supplies were attributed to the high incidence of diarrhoeal diseases and hepatitis in the

camps.

Figure 6.5 Major Causes of Under Five Deaths, Hartisheik A Camp, Jan - Nov 1989



Source: Save the Children; UNHCR; Ethiopian Ministry of Health and Administration for Refugee Affairs (cited in Toole and Bhatia 1992).

A very high prevalence of malnutrition among children under than five years of age was also reported. Nutritional surveys conducted by the Save the Children Fund show that the acute malnutrition of children under five years of age increased from 13.5% in July 1988 to 26.4% in March 1989 (Table 6.6). The malnutrition rate of 26.4% of children with Weight-for-Height (WFH) below 80% was found to be comparable to that reported in Korem at the height

of the Ethiopian famine in 1984 (Shoham, et al 1989).

Nevertheless, despite the existence of a high level of malnutrition, most deaths in the refugee camps were caused by the increased incidence of communicable diseases and not by starvation. For instance, there was an epidemic of hepatitis which affected up to 5,000 refugees in only one of the camps between January and May 1989 (Toole and Bhatia 1992). Although there are no detailed figures for the number of deaths caused by this disease, it is believed that it caused hundreds of deaths. Diarrhoea and pneumonia, which were the leading causes of death among children, also caused large numbers of deaths amongst the adult population. As Toole and Bhatia (1992) argue, the high incidence of diarrhoea and hepatitis, which affect the nutritional status of children, also contributed to the high rate of acute malnutrition.

Table 6.6 Nutritional Status of Under Five Children at Hartisheik, Ethiopia, September 1988 - March 1989.

No	Date	Sample	Proportion < 80% WFH	Proportion < 70 WFH
1	Sept 1988	1,080	13.5 %	1.8 %
2	Nov 1988	1,350	21.7 %	2.2 %
3	Jan 1989	1,350	16.9 %	2.3 %
4	Mar 1989	1,350	26.4 %	4.3 %

Source: Shoham, J., Rivers, J. and Payne, P. (1989) "Hartisheik," Centre for Human Nutrition, London School of Hygiene and Tropical Medicine: London, Memeo

The survey households who lost members of their families in the refugee camps also reported that the deaths were caused mainly by disease rather than starvation. While only a few households who lived outside the refugee camps reported deaths of members of their households, almost all those living in the camps reported the death of at least one family member. This again shows that the high mortality rate in the camps was associated with the breakdown of sanitation.

6.5 Conclusions

Three years of war have had a devastating impact on rural Somaliland with far reaching economic and social consequences. The human cost of the war has been particularly appalling with the death of more than 20,000 people in the rural areas alone. It is also responsible for the loss of more than half of the country's livestock population, forcing thousands of pastoralists to become destitutes dependent on food aid distributed in the refugee camps. This loss in livestock resulted from the destruction of water sources, land mines planted extensively in the rural areas, the appropriation of livestock by government troops, the lack of veterinary services, and the distress sale of livestock by pastoralists.

Other effects of the war in agricultural areas included the disruption of food production which virtually ceased, the mining of some of the best agricultural land in the country and the destruction of tree crops and irrigation equipment in the horticultural farms. One of the most serious effects of the war was the closure of Berbera port which caused the collapse of livestock markets. This was exacerbated by the breakdown of banking and the subsequent depreciation of the Somali shilling against foreign currencies.

Although the collective coping mechanisms and community insurance systems

have played an important role in mitigating the effects of the war and subsequent crisis on the livelihoods of rural households, they have also partly contributed to the crisis. For instance, high arrears in blood money payments have, for the first time, forced many households to default on payments, thereby jeopardizing the functioning of the whole system. Meeting social obligations during the crisis has also forced many households to liquidate some of their productive assets.

One immediate consequence of the war has been the increased vulnerability of rural households to future conflicts, droughts and famines. The coping strategies of rural households have been weakened to such a degree that the moderate droughts with which they used to cope well in the past are now likely to cause starvation and death.

CHAPTER 7. HOUSEHOLD RESPONSES

7.1 Introduction

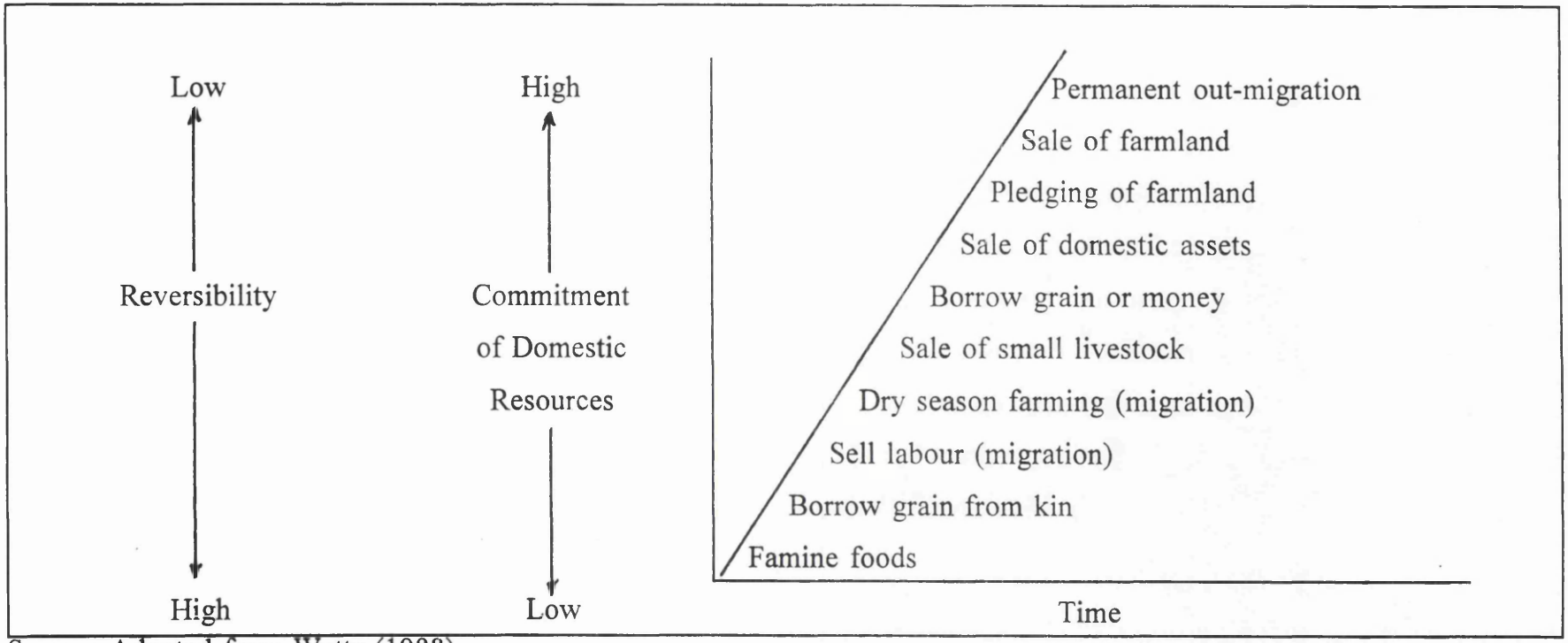
This chapter analyses the response pattern of rural households during the crisis. It focuses on how these households managed their assets and the key factors that determined the sequence of responses they took up in order to mitigate the effect of the crisis on their livelihoods. Since the most important assets they owned were animals, the chapter concentrates on the sequence in which the animals were disposed of. The availability of accurate data on the animals sold by the households for the period from 1988-92 makes it possible to get a full picture of the sequence and pattern of responses. Unlike most of the household response studies which are based on one year crisis, the five year data allows comparisons to be made between strategies adopted in different situations during the crisis and normal times.

Moreover, the underlying factors affecting the responses taken up by the households are also examined in order to understand more clearly the problem of household resource management in crisis situations. In this respect, a simple linear programming model is used to assess the effects of individual decisions on the overall structure and interrelationships of household resources.

7.2 The Concept of Response Sequencing

The literature on household coping strategies report a sequence of responses adopted by rural households in mitigating the effects of food crisis on their livelihoods. It is argued that, despite some variations, there is a general pattern in which the responses are adopted (Shipton 1990). Watts (1988), for instance, argued that households follow a sequence of responses depending on the intensity of the crisis. Based on a case study in northern Nigeria, Watts developed a model of household responses to food crisis by listing sequentially 10 most commonly observed responses (Figure 7.1).

Figure 7.1 A Model of Household Response Sequence



Source: Adapted from Watts (1988)

Others have also identified a similar sequence of responses followed by rural households faced with food crisis. In north eastern Ethiopia, for example, Rahmato (1991) reported a sequence of responses in the following order:

Stage One	- collection of wild foods
	- reduction of number of meals
	- inter-household transfers
	- sale of small stock
Stage two	- temporary migration in search of employment
Stage three	- sale of young cattle
	- sale of cows
	- sale of draft oxen
	- sale of personal possessions (e.g. jewellery)
	- sale of housing
Stage four	- migration in search of relief

According to Rahmato, there is a sequential series of responses taken up by households as survival strategies. In the first stage, households take austerity measures and reduce their food consumption. At the same time they also

dispose of their small stock. In the second stage, households migrate temporarily in search of employment. The third and the fourth stages involve the liquidation of cattle, draft oxen and other assets, and out-migration in search of relief.

Cutler (1986), who also surveyed migrant households in the Red Sea province in Sudan, reported a sequence of responses in a three-stage pre-famine model as follows:

Stage One	sale of small stock (e.g. goats)
	labour migration
Stage two	sale of tools
	sale of breeding animals
	sale of household belongings
	sale of land
Stage three	mass migration

These and other studies conducted in India (Walker 1989) suggest that households adopt a predictable sequence of responses. They advocate a sequence of actions ranging from the disposal of "less important assets" such

as goats and sheep to the sale of their most productive assets such as oxen. Corbett (1988), who reviewed several studies on household responses in Africa, concluded that there is a distinct sequence in the responses of households faced with declining entitlements to food. Reflecting this view, Campbell (1990a: 231) also argued that the adoption of responses "follows a sequence from more to less palatable alternatives as a shortage intensifies, ultimately resulting in the liquidation of productive assets."

Two factors are considered as the determinants of the sequence in which responses are taken up. The first is the "reversibility" of the responses (Campbell 1990; Corbett 1998; Shipton 1990; Watts 1988). This suggests the responses are sequenced in such a way that the earliest or most reversible responses are adopted first and the least reversible ones last. On the basis of this criterion, the responses are classified as "earliest reversible responses", "immediate or semi-reversible responses", and "least reversible responses" (Shipton 1990). For example, in animal disposal strategies adopted by households, the sale of small stock is always assumed to be the "earliest reversible response" in the sense that the households can reconstitute them soon after the crisis has ended. On the other hand, the sale of cows is considered to be one of the "least reversible responses".

The second criterion which also determines how responses are sequenced is the

"commitment of domestic resources" (Watts 1988). This suggests that the responses involving the lowest "domestic resource commitments" are adopted earlier than those involving greater "domestic resource commitments". The two criteria are inversely related and the responses that are highly reversible will involve lowest "commitment of domestic resources" (Figure 7.1).

However, there are three areas of confusion in these concepts. Firstly, the concept of "reversibility" is not adequately defined and it is not clear why certain responses should be more reversible than others. Nor is it clear how they should be determined. For instance, will a decision involving disposal of a camel be more or less reversible than one involving disposal of an ox? Does the "reversibility" of responses change over time or does it mean that some responses are *always* more reversible than others? Furthermore, provided that there are markets for all household assets, then the sale of any asset is reversible in the sense that the household can purchase it back after the crisis.

Secondly, the concept attaches values to household assets arbitrarily in order to classify them on the basis of "reversibility". Consequently, some assets are always assumed to be less important than others and are therefore "easily reversible". A good example is the case of small stock which are always assumed to be less important than other animals and assets. Thus, in food crisis situations it is expected that they will be disposed of earlier than other animals

and assets. Reflecting this view, Cutler (1985: 49) argued that goats are sold off first as "relatively unimportant assets". Corbett (1988) also argued that sheep and goats are acquired during non-crisis years as a form of saving and easily liquidated at times of crisis. She suggested that they do not play a key role in income generation because "unlike oxen [they] are not essential to crop production (1988: 1106)." But this is simplistic and misleading because sheep and goats are important assets and play a key role in generating incomes for rural households. They are not just kept as liquid assets to be disposed of easily as and when needed. More importantly they are kept for income generation. Moreover, they have particular significance in famine situations since they breed more quickly and rebuild stocks soon after the crisis.

Finally, these concepts fail to take into account important factors such as market conditions which are exogenous to household decision-making. These factors explain why the order of responses changes from time to time. Which responses are taken up by rural households and in what order depend on what is possible in the prevailing market conditions. For instance, households may not dispose of some assets at a particular time because either the prices are too low or there is no market for them - conditions which too often occurs in crisis periods. In these circumstances, neither the "reversibility" nor the "commitment of domestic resources" will determine the kind and sequence of responses adopted.

Because of the dynamic environment in which households live, responses are re-examined and changed in the light of new circumstances. The implication of this for the concept of the sequential uptake of responses is that there cannot be a predetermined sequence of actions followed by rural households since both the timing and sequence of responses will vary from time to time.

7.3 Rural Household Responses in Gabiley, 1988-92

During the crisis rural households in Gabiley adopted a range of responses. Considering the overall pattern of responses, the order in which they were taken up contrasts sharply with those described in response sequence models. When the five year response patterns are put together the picture that emerges indicates that the sequence of responses was reversed: those responses considered as the last in the sequence were adopted earliest, while those considered as the earliest responses were taken up late in the crisis. Starting with out-migration and disposal of oxen, households adopted a strategy that was not determined by the "reversibility" of actions but by a range of factors some of which were outside the control of household decision-making.

Since the most important assets owned by rural households were animals, I shall concentrate on the responses concerning the disposal of animals. Although some households took up other responses such as the sale of possessions, these

were negligible because very few households had managed to migrate with their possessions. For example, most households reported that they left behind the main parts of their collapsible huts (*Aqal Somali*) which were looted during the war. Unlike the mobile pastoralists who keep a sufficient number of burden camel to move from one location to another, most of these households relied on donkeys to transport their belongings.

Although households reported cutting back their food consumption during the crisis, there was no particular order in which the response was adopted. Even in the non-crisis periods, rural households adopted austerity measures by reducing both the amount and number of meals taken per day. Reducing consumption was a common strategy adopted by rural people in Somaliland during the dry season. This often involved taking fewer meals, eating coarse food, reducing milk consumption and so on. In the pastoral areas, for instance, camel boys lived on milk alone without food grains for very long periods. Nevertheless, the survey households reported that food expenditure accounted for a small proportion of their income, while meeting community obligations such as blood money payments and expenditure on other requirements such as water for their animals accounted for a much larger proportion of their income. One reason why food expenditure was low was because all households received ration foods from the refugee camps. Although the amount of food they

received varied from time to time, it mostly covered up to 30 percent of their requirements.

7.3.1 Migration

One of the first responses to the development of the crisis in 1988 was mass migration by the households across the border to Ethiopia. Soon after the outbreak of the war in and around Gabiley in June 1988, most households migrated with their animals after suffering heavy losses in attacks by government troops. Anticipating that the war would be over in a matter of weeks, they temporarily settled in the border villages. It was not until early July 1988 when government troops recaptured Hargeisa from the SNM that they realized the war was going to last much longer than they originally thought. They registered in the refugee camps late in the year when relief distribution had started. All households interviewed reported migrating to eastern Ethiopia during the crisis.

Although security was the main reason why people migrated from their villages, disruption of markets and trade and the destruction of the

infrastructure meant that the situation was very critical[24]. In eastern Ethiopia they were at least able to sell some of their animals to exchange for food, though prices were low and falling as the crisis deepened. Thus migration was an important survival strategy for these households.

7.3.2 Sale of Oxen

When the disposal of different types of animals during the crisis is compared, the sale of oxen turns out to be one of the earliest responses in the sequence in which animals were disposed of. The animal disposal strategy adopted by 50 households from 1988-92 are compared in order to establish the pattern of sales and present an overall picture of the response strategies adopted by the households. Those households selected from the overall sample were chosen because they owned all types of animals, including oxen, cows, sheep and goats. This is important because if a household owns only one specie of animal the timing of their sales cannot be compared with a household owning different species of animals and having a wider choice of response options.

Table 7.1 summarises the sales of different animals from 1988-92. From August to December 1988, some 50% of the households sold an average of 1.5

[24] For example, non-Isaaq households who lived around Gabiley also migrated from the area ring the crisis, not because of fear of government attacks but because of food crisis.

oxen. Yet for the remaining four years from 1989-90 only three households sold an average of one ox. No oxen were sold from 1991-92. The first households sold their oxen just one month after the outbreak of the war, but the sale continued until December 1988. Households reported selling their oxen at small markets in eastern Ethiopia, including Hartisheik, which later became the main refugee centre. Traders and farmers from the main towns in eastern Ethiopia were reported to have bought the oxen.

Table 7.1 Sequence of Animal Sales

	1988		1989-90		1991-92	
	% of Sample	Mean Sales	% of Sample	Mean Sales	% of Sample	Mean Sales
Oxen	50	1.50	6	1.00	0	0
Cows	46	2.60	34	2.25	14	1.35
Camel	8	1.50	2	1.00	0	0
Sheep	36	5.90	32	11.44	32	10.10
Goats	4	2.20	4	3.00	6	3.00

Source: Survey data, 1992

The pattern in which oxen were sold clearly indicates household preference in

sequencing their responses. Although they knew that the crisis was deepening, they did not hold on to their most valued asset up to the last possible time. From their point of view, this response was the outcome of carefully weighed decisions rather than panic selling. Households interviewed during the survey reported that they considered a wide range of critical factors affecting both their current and future livelihoods, including current and future market conditions for different animals, the revenues they would forgo by selling some animals rather than others, and the costs and risks associated with keeping particular animals.

7.3.3 Sale of Cows

The sale of cows was also one of the earliest responses that many households took up during the crisis. Forty six percent of households sold an average of 2.6 cows in 1988 as compared to 33% who sold an average of 2.3 cows in the next two years (Table 7.1). But in the following two years (i.e. 1991-92) only 14% of the households sold an average of 1.4 cows. Although the number of households who sold cows in 1988 was almost as high as those who sold oxen, households reported that most of the sales of cows took place late in the year from October to December, while most of the oxen were sold between August and October. The other significant difference between the sale of oxen and cows is that the sale of cows continued in the next four years, whereas, the sale

of oxen was confined to the first two years of the crisis.

The overall sale of cattle was highest in the first year of the crisis. Some 84% of the households reported selling either oxen or cows in that year compared to only 36% of the households who sold either sheep or goats, despite the fact that the average small stock holdings were three times higher than those of cattle.

7.3.4 Sale of Camels

Because of the fact that only 30 out of the 50 households owned camels, the sale of camels was generally lower than that of other animals. Nonetheless, it was highest in 1988 when 8% of the households sold an average of 1.5 camels. But in the next two years only one household sold a camel. Households disposed of their camels in 1988 despite the fact that they relied on them as their primary means of transport. Increased mobility particularly in the first year of the crises meant that the need to preserve camels for transport was higher than at any other time.

7.3.5 Sale of Small Stock

Although the sale of oxen, cows and camels was highest during the first year

of the crisis, the sale of sheep and goats, on the other hand, remained almost unchanged and did not differ significantly from the pre-crisis period. Only 36% of households sold an average of 5.9 sheep in 1988, while 4% of them sold an average of 4.0 goats in addition to sheep. The sale of sheep remained almost the same in the subsequent years. From 1989-92 around 30% of the households sold an average of 5.5 sheep per year.

It is interesting to note that the sale of goats was generally very low. Although the loss of goats was significantly higher than that of other animals in the initial stages of the crisis, average holdings still remained higher than that of other animals except sheep. Two possible reasons were suggested by the affected households: (1) households which lived inside the camps or those who had members of their family living there mostly kept goats rather than sheep; (2) those households who sold their cows kept their goats for milking.

7.4 Understanding Animal Sales Strategy

Why did households dispose of their animals in this pattern? One possible explanation could be that 1988 was the peak of the crisis and disposal of productive assets such oxen was a terminal stage in households responses. Although this might seem plausible because of the fact that households suffered their highest losses in 1988, there is little evidence to support this hypothesis.

It is true that animal losses were highest in 1988, but in fact the real crisis occurred in 1989 when there were famine conditions that resulted from a combined social and health crisis and the collapse of markets and trade. It was in 1989 that the crisis had greatest impact on households.

The real explanation lies in the way in which markets functioned during the crisis. Thus, the first step to understanding the animal sales strategy adopted by the households is to look at the prevailing market prices from 1987-92. Table 7.2 presents the average prices of different animals during this period[25]. It shows that the price of sheep and goats fell in the first year of the crisis, while the price of other animals increased (at least nominally)[26]. For instance, the price of sheep fell by 10% from 1987 to 1988, while the price of oxen rose by 60%. In 1987, the price of an ox was equivalent to about 9 sheep, but in 1988 it was equivalent to more than 15 sheep. But this changed drastically in 1989 when the price of sheep and goats increased more than five fold, while the price of oxen and camels actually fell. The price of cows rose in 1989, though the increase was modest compared to the 500% increase in the price of small

[25] The prices from 1988-92 are the actual prices households reported receiving after selling eir animals. However, these are not different from the prices that prevailed in the main markets ed by rural households to sell their animals.

[26] The inflationary price increases were due to declining exchange rates between the Somali illing and other currencies.

stock.

Table 7.2 Prices (So Sh '000') and Price Indices for Animals, 1987-92

Year	Goats		Sheep		Cows		Camels		Oxen	
	Price	Index	Price	Index	Price	Index	Price	Index	Price	Index
1987	5.0	100	5.2	100	35.0	100	45.0	100	45.0	100
1988	4.6	92	4.7	90	39.0	111	72.5	161	72.0	160
1989	25.0	500	27.0	519	65.0	186	50.0	111	66.8	148
1990	85.0	1,700	45.0	865	165.0	471	150.0	333	200.0	444
1991	95.0	1,900	100.0	1,923	220.0	629	320.0	711	350.0	778
1992	140.0	2,800	150.0	2,885	430.0	1,229	680.0	1,511	900.0	2,000

Source: Survey data, 1992

When households were asked why they sold their animals in this pattern, they explained that the prevailing market price was one of their main considerations. Muhumed Meygag is one of the household heads who adopted this sequence of responses. At the beginning of the crisis he owned 30 sheep, 5 goats, 13 cows, 1 ox and 1 camel. He sold his animals in the following order: one ox in August 1988; his only camel in January 1989; two cows in 1990; another two cows in 1989; three goats in 1991; and five sheep in 1992. Asked why he sold his animals in this sequence, he explained:

> During the war I was supporting two families and I was required to make financial contributions to the SNM. The money I raised by selling the ox was at least sufficient to meet our principal needs. I could only have raised that amount by selling all the sheep, if there was a buyer willing to purchase them all. When you have to sell an animal you study the market, you assess your priorities and then you decide which animal to sell.

Another household head is Ibrahim Hersi who lost his father during the war. His family is classified as destitute (*Caydh*) and was exempted from the dia-payments. At the beginning of the crisis his family owned 70 sheep, 10 cows, 7 camels and 2 oxen. During the crisis he sold 2 oxen in 1988, 7 sheep in 1989 and 5 cows in 1990. He explained the sale of his animals as follows:

1988 was a particularly difficult year for our family. We lost 50 sheep in that year. I could have sold the rest of the sheep, but there was no market for them. One sheep sold for as little as So Sh 2,000 in Allaybaday[27]. But oxen were selling relatively better. In addition to our subsistence requirement, I needed to buy a rifle so I sold two oxen. In the following year I sold some sheep because by then the price had improved. By 1990 we had only 6 cows, but I sold 5 of them and took the remaining cow to a relative to keep it for us. You see, it was very difficult to keep cattle in that year. There was a severe shortage of both water and pasture. In the previous years we fed them with lentils (*misir*) we received from the refugee camps, but like the other rations it was reduced in 1990.

The accounts of these two households and others interviewed in the survey illustrate that the decisions concerning the timing and sequence of animal sales do not just follow a predetermined order but change according to a range of exogenous factors (e.g. prevailing market price) and endogenous factors (e.g. the costs associated with selling or keeping particular animal and the type and size of their priority needs). In other words their decisions were based on careful calculations of prevailing market conditions, future revenues households would forgo by selling animals and the future viability of their herds. Using a ranking and a linear programming model, these issues are examined in detail.

[27] This is one of the villages on the border between Ethiopia and Somaliland to which some useholds migrated during the war.

7.5.1 Ranking Model

Corbett (1988) identified the importance households attach to both current and future income streams in sequencing their responses. This point was further elaborated by Devereux (1993a) who argued that current as well as future values of assets determine the timing of their disposal. These factors are important in understanding the sequence of household responses because they take into account: (1) the current values of assets at the time of disposal and not just the historic or pre-crisis values; and (2) the future revenues households would forgo by selling assets. Thus the decision to sell one type of asset earlier than another would depend on, among other things, the current market price of the asset and the expected future revenue which the household would forgo by selling the asset. But other important asset characteristics such as liquidity, lumpiness and the risks associated with keeping the asset also influence the decision. Riskiness is a particularly important consideration in crisis situations because of the increased probability of losing the asset altogether.

The sequence of responses by rural households is examined using a ranking model. Although this mainly compares the current values of assets with their future revenues, it also takes into account risks associated with future revenues by estimating expected values. The model is based on a ranking ratio similar to the net benefit-investment (N/K) ratio used in investment appraisal for

ranking projects. The idea is that the basis of divestment decisions made by the households is similar to that made in investment decisions. In both cases the decision criteria involve comparing costs and benefits associated with the decisions over time. What makes this ratio particularly relevant to the household responses is the fact that it is used for assessing decisions that are not mutually exclusive i.e. the selection of one option does not mean that the other cannot be chosen. This means the decision criteria of this ratio are concerned with the sequence in which options are selected and not whether a particular option is chosen or not.

Households divestment decisions involve weighing up the costs and benefits associated with disposing of an asset. However, because of changes in market prices these decisions have to be reviewed from time to time. This is particularly important during crisis situations because market instability causes significant changes in the relative prices of assets which then affect the sequence in which assets are disposed of. This is illustrated by animal prices from 1989-92 (Table 7.2). The prices show two types of movements. The first is a general inflationary price increase resulting from the collapse of the banking system during the war. The second movement involves a drastic shift in the relative prices of animals (Table 7.3). For example, between 1987 and 1988 the relative price index of sheep and oxen rose by 77%. But in 1989 the index fell by more than 70% compared to the pre-crisis level.

Table 7.3 Relative Price Indices for Different Animals, 1987-92

	Goats-Oxen	Sheep-Oxen	Goats-Cows	Sheep-Cows	Cows-Oxen
1987	100	100	100	100	100
1988	174	177	121	123	144
1989	30	29	37	36	80
1990	26	51	28	54	94
1991	41	40	33	33	124
1992	71	69	44	43	163

Source: Survey data, 1992

These changes in the relative prices can be captured by the ranking criterion which is given by the ratio:

$$R = \frac{P_a}{\sum_{t=0}^{T} \frac{R_t}{(1+i)^t}}$$

Where

P_a = the current price of the animal

R_t = the expected revenue generated by the animal in year t

t = the productive live of the asset

Given the alternative options open to the household, the decision criterion is to rank the responses on the basis of this ratio. The alternative options are not mutually exclusive i.e. the selection of one option does not mean that the other cannot be chosen. Hence, the decision is mainly concerned with the order in which responses are taken up and not whether the household takes up the

response or not. By selling assets with the highest ratio households maximise the cash raised per unit of the total expected revenue.

Although it is easy to obtain the current market values of a particular asset, estimating its expected future revenue is rather difficult. Firstly, there are risks associated with future revenues of the asset which often increase during periods of crisis. Secondly, revenues received in the future are worth less than those received at present. In other words, the future revenues of assets have to be discounted at some rate in order to compare with their present values. However, it was still possible to estimate the expected revenue for the different animals. The average annual revenues of different animals are estimated for their remaining productive lives[28]. Using households' subjective probabilities, the future revenues are then adjusted for the risk of droughts. Households expect a moderate drought every five years and a severe drought every ten years. Moderate droughts normally do not have much effect on the production of camels, sheep and goats, therefore their revenues are not expected to change much. But net revenues from cattle are expected to fall. However, in severe droughts which occur every 10 years revenues for all animals are expected to

[28] The remaining productive life of small stocks is assumed to be four years, given their erage age. For cows, oxen and camels it is assumed to be six, seven and eight years, spectively.

fall significantly. Expected future revenues are discounted using annual rates of return of 10.5% for sheep and goats, 12% for cattle and 10% for camels[29]. Although these figures may change depending on assumptions made about the probabilities of risk and discount rates, the method of estimation used is consistent for different animals.

Tables 7.4-7.8 present the ranking ratios calculated for different animals from 1988-92. Table 7.4 shows that in 1988 the ratio for oxen was highest, while that for goats was lowest. Thus on the basis of these criteria, an ox was most likely to be sold first in 1988, while a goat was least likely to be sold. But because of a sudden change in the relative prices of animals in 1989, these ratios changed drastically. Camel and oxen have the lowest ratios, while sheep and goats have the highest ratios as shown in Table 7.5 which suggests that in 1989 sheep and goats were most likely to be sold off first. The ratios continue to change until 1991, but stabilize thereafter[30].

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[29] The annual rates of return for sheep and goats are assumed to be the same as those timated for pastoral households in Central Somalia (Abdulahi 1990).

[30] An alternative explanation of the ratios is that households would have been better off if y sold animals with a ratio of greater than one. However, this does not take into account the tus and other non-quantifiable benefits which householders attach to keeping animals. Even n, a lack of alternative investment prevents them from contemplating such a decision.

Table 7.4 Ranking Animal Sales by Price-Expected Revenue Ratio, 1988

	P_a	P_vR	Ratio	Rank
Goat	4,600	4,279	1.07	5
Sheep	4,700	4,279	1.10	4
Cow	39,000	20,905	1.87	3
Ox	72,000	29,211	2.46	1
Camel	72,500	32,943	2.20	2

Source: Survey data, 1992

Table 7.5 Ranking Animal Sales by Price-Expected Revenue Ratio, 1989

	P_a	P_vR	Ratio	Rank
Goat	25,000	12,838	1.95	2
Sheep	27,000	12,838	2.10	1
Cow	65,000	62,716	1.04	3
Ox	66,800	87,632	0.76	4
Camel	50,000	98,830	0.51	5

Source: Survey data, 1992

Table 7.6 Ranking Animal Sales by Price-Expected Revenue Ratio, 1990

	P_a	P_vR	Ratio	Rank
Goat	85,000	29,955	2.84	1
Sheep	45,000	29,955	1.50	2
Cow	165,000	146,337	1.13	3
Ox	200,000	204,474	0.98	4
Camel	150,000	230,602	0.65	5

Table 7.7 Ranking Animal Sales by Price-Expected Revenue Ratio, 1991

	P_a	P_vR	Ratio	Rank
Goat	95,000	42,793	2.22	2
Sheep	100,000	42,793	2.34	1
Cow	220,000	209,053	1.05	4
Ox	350,000	292,105	1.20	3
Camel	320,000	329,432	0.97	5

Source: Survey data, 1992

Table 7.8 Ranking Animal Sales by Price-Expected Revenue Ratio, 1992

	P_a	P_vR	Ratio	Rank
Goat	140,000	81,307	1.72	2
Sheep	150,000	81,307	1.84	1
Cow	430,000	397,200	1.08	4
Ox	900,000	555,000	1.62	3
Camel	320,000	625,920	0.51	5

Source: Survey data, 1992

Although this model has the advantage of incorporating the main factors which determine the disposal of assets by rural households, its analysis is still partial. It does not take into account the interrelationships between different animals or how the sale of a particular species of animal affects remaining household resources. For example, the sale of a draught ox may not only affect the cultivation of the land, but may also affect the number of cattle for which the farm can provide sufficient fodder. This means that decisions involving the disposal of household assets will have repercussions for both the farm and the herd.

7.5.2 Linear Programming Model

A linear programming model is used to examine the effects of animal sales on household resource structure. The basic model is set up using the 1987 survey data to look retrospectively at the effects of individual responses on overall resource allocation. The use of the technique for this kind of analysis was highlighted in Chapter 3. This section focuses on the construction of the matrix and the interpretation of the results.

A representative model was set up for the 56 dia-paying households which are considered to be relatively homogeneous. Although there are some variations in terms of asset holdings, these are not expected to make much difference as to how households allocate their resources, given the fact that they all face the same constraints and have similar resource structures. The matrix constructed includes various types of activities and enterprises that are open to a household and the constraints that limit its production possibilities. The main constraints included are land, labour, pasture, subsistence requirements and livestock numbers. A household's other objectives, such as meeting minimum subsistence requirements, are also incorporated into the matrix as constraints which have to be met before maximising the total net revenue.

Given the constraints, the household is assumed to be maximising its total net

revenue. This means that if the household has several objectives, total net revenue maximisation is specified as the objective function, but other objectives are defined as constraints. In this way, the household's other important objectives are taken into account without the need to use a goal programming model which formally incorporates a household's multiple objectives.

Three types of activities are included in the model. These are producing, selling and transfer activities. The producing activities are the main ones such as the crops and animals produced by the household, while the selling activities represent the sale of products which are separate from the producing activities. A transfer activity is used for passing resources from one row to another in order to add flexibility to the model. The net revenues for the producing activities are the average annual gross margins of the activities based on the 1987 survey. For the selling activities, the net revenues are their selling prices. Since the transfer activities do not affect the total net revenue, their net revenues are included in the matrix as zeros.

The input-output coefficients used in the model are derived from the 1987 and 1992 survey data. They represent the demand and supply of the resource and the relationships between different types of activities. Negative coefficients indicate the supply of resources or "giving of permission" to undertake other activities. Positive coefficients, on the other hand, indicate the demand for

resources or "permission" to carry out activities.

The results of the model are presented in Table 7.9. The base model produces an optimum plan with a net revenue of So Sh 184,009 which satisfies minimum household requirements (Appendix 7.1). The table shows the effects of animal disposal scenarios on the household's total net revenues. For instance, the sale of an ox which raises 72,000 shillings reduces the total net revenue by 7.7%, while the sale of 15 sheep or goats which raises the same amount of cash reduces the total net revenue by 15.5%. The sale of a cow reduces the total net revenue by only 2.7%. Changes in the total net revenues are revenues forgone as a result of the sale of animals. In the case of the ox, these would be the costs of withdrawing it from production. In the case of the sheep or goats, these would be the lost output revenues.

These results show that in 1987/88 the sale of an ox was preferable to the sale of 15 sheep or goats which would have raised the same amount of cash. They also show that the sale of a cow was preferable to the sale of an equivalent number of sheep or goats. These results are again consistent with the households' animal sales strategy for 1988. Although this model is static in the sense that it studies the situation in a single period, the solutions would not be expected to differ much from the present one if a dynamic element were incorporated. The current model adequately represents households problems.

The linear programming models are criticized for being normative in the sense that they indicate what households ought to do under a given set of circumstances and not what they will do. However, the results of this model are validated by the actual household resource allocation which closely resembles those in the model. The important point to note is that while the model does not predict the sequence in which assets have to be taken up, it nevertheless shows what individual responses would cost the household and how they would affect overall household resources.

Table 7.9 Effects of Animal Sales Scenarios on Total Net Revenue.

	Effect on Total Net Revenue	
	Total Net Revenue	% of Change
Base Model	184,009	
Disposal of an ox	169,790	-7.73
Disposal of 15 sheep/goats	155,584	-15.45
Disposal of a cow	179,057	-2.69

Source: Survey data, 1988 & 1992

7.6 Conclusion

In this chapter the hypothesis that rural households adopt a predictable sequence of responses is rejected. The analysis presented supports the alternative proposition that there is no particular sequence of responses taken up by households faced with food insecurity and famine conditions. It is argued that the "reversibility" and "domestic resource commitments" criteria claimed to determine sequence of responses are insufficient in explaining household responses. These criteria fail to take into account important factors such as market conditions, which determine the order in which responses are taken up.

The strategy involving the sale of animals adopted by 50 households is examined in detail in order to understand the order in which animals were disposed of and the factors that influenced the choice made by the households. Considering the overall pattern of responses taken up by households, the picture that emerges indicates that the order in which they were taken up contrasts sharply with those described in response sequence models. The responses considered as the last in the sequence were in fact adopted earliest, while those considered as the earliest were taken up late in the crisis. Perhaps the most important factor in determining the order in which the animals were disposed of was the relative price of animals. Significant shifts in prices during the five year period under consideration were mainly responsible for the order in which animals were disposed of. A ranking model which takes into account changes in relative prices and the expected revenue a household would forgo by disposing of assets is used to examine the order in which responses were taken up.

The effects of individual responses on overall household resources are also shown to be important in determining the sequence of responses. Given the interrelationships between different household resources, the disposal of any particular asset affects both the structure and organisation of household resources.

CHAPTER 8. HOUSEHOLD RESPONSES AND FAMINE PREVENTION

8.1 Introduction

This chapter explores the implications of household responses for famine early warning and relief. The use of household responses in monitoring food crises has been widely suggested because it is argued that it can provide earlier and more accurate information than existing indicators. The Sahel and Horn of Africa in particular have been identified as potential areas where EWS could monitor the responses of households (Davies 1993). In the light of the analysis presented in the previous chapter, the ways in which monitoring household responses could provide information on impending food crises are examined in this chapter. The implications of better understanding household responses for famine relief are also assessed.

8.2 Implications for Famine Early Warning

Accepting the hypothesis that household responses do not follow a predictable pattern has implications for their use in famine early warning. This means that response sequences cannot generally be used as indicators of the level of stress faced by households unless the underlying factors are fully understood. If they are used in this way, they can even produce misleading information about the

real nature of the situation affecting households. For instance, in the sequential response model, the disposal of some assets is always interpreted as a late indicator suggesting the final stage of the household coping response. Yet, as argued in Chapter 7 it may be the first stage of the response.

Nevertheless, rejecting particular sequences of responses does not necessarily mean responses have no use in EWS. On the contrary, I shall argue that gathering information about them is important in EWS provided that the underlying factors are fully understood. By understanding the relationships between resources and how changes in market conditions affect asset structure of households, responses can be interpreted with greater accuracy.

8.2.1 Monitoring Response Sequences

The idea of using household responses in famine early warning has arisen because of the failure of the existing EWS to provide timely and accurate information on declining entitlements to food and impending famine conditions. The EWS has concentrated on food availability indicators. The shift of emphasis in explaining famine away from food supply explanations to a better understanding of entitlements at the conceptual level has not been reflected in famine early warning (Cutler 1985). Because of the donors' emphasis on "objective indicators", supply oriented indicators are still widely used in EWS.

The food balance sheet is an example of a method still based on the concept of per capita food availability. Moreover, market indicators widely recommended for EWS have not yet been systematically incorporated into these systems because of difficulties associated with the interpretation of market data. Nutritional surveillance, which is also one of the main tools used in EWS, is a late indicator since the rapid decline of nutritional status occurs only in the final stages of famine. In addition, gathering information by conventional EWS has also proved unsustainable because of the very high costs involved.

Consequently, monitoring household responses as part of famine early warning has been widely recommended (Campbell 1990; Corbett 1988; Maxwell and Frankenberger 1992). This is based on the concept of the households' sequential uptake of responses. The idea here is that by monitoring the sequence of responses, early warning systems can identify the level of stress faced by households. This means that responses can be used as indicators for impending food shortages and declining food entitlements. Campbell (1990a: 239), among others, has argued that monitoring the sequence of household responses could provide relevant, accurate and timely information on emerging food shortages, adding that the outcome of this type of information could provide a simple binary message - "there is or there is not a problem." Because of their usefulness and simplicity, according to Campbell, these responses could even be used as an alternative set of information to the existing EWS.

It is also argued that monitoring household responses in famine EWS could provide information that is geographically specific and timely for identifying declining entitlements to food. For example, Cutler (1986: 181) has argued that "studies on the sequence of household responses ... are likely to give more time specific and location specific early warning". Furthermore, monitoring responses is claimed to have a number of advantages over the conventional EWS (Campbell 1990a) by: (1) reflecting the situation where food shortage first occurs; (2) providing a simple binary message which can be easily interpreted; (3) being inexpensive since it is based on local knowledge and relies on local people as compared to externally funded systems; and (4) by being less bureaucratic.

In monitoring household responses, Maxwell and Frankenberger (1992) suggested three types of indicators: (1) leading or early indicators which are the changes in responses before the onset of food crisis such as crop failures, livestock conditions and changes in market conditions; (2) concurrent or stress indicators which occur with decreased access to food; and (3) trailing indicators which occur after entitlements to food have declined. Within this framework, the sale of productive assets and out-migration, for example, are interpreted as a sign that households have failed to cope with the food crisis.

This concept of monitoring household responses for famine EWS is based on

two important assumptions. First, it is assumed that households adopt responses sequentially and that this sequence follows a predictable pattern (Watt 1988; Corbett 1988; Campbell 1990). Although community differences in adopting responses are reported, it is still argued that the response strategies are selected in an identifiable sequence and that there are similarities across communities which can be generalised. This assumes that household responses follow repeatable and predictable patterns which can indicate the stage of declining entitlements to food. Secondly, it is also assumed that responses are not adopted simultaneously (Campbell 1990a) and that each response is exhausted before the next one is taken up.

However, these assumptions are untenable for a number of reasons. First, as argued in Chapter 7, the proposition that there is a predictable pattern of responses is not supported by the empirical evidence presented in the preceding chapters. The analysis showed that there is no "typical" pattern that can be used as a basis for monitoring declining food entitlements faced by households. It was argued that the sequence of responses adopted by households is conditioned by a range of factors some of which are outside the control of household decision-making. Second, although some of the responses are exhaustible in the sense that they are adopted and used before households take up subsequent responses, many others are continuous processes, such as food rationing (Devereux 1993), while other responses are taken up simultaneously.

For example, the sale of small stock, distress migration and the sale of oxen may all take place at the same time rather than being adopted as a series of discrete events. Thus, the assumption, that responses are not adopted simultaneously, does not hold true in many cases.

Third, responses take place in a changing dynamic environment which makes it difficult to establish a set of responses that can be used as a basis for monitoring changes. Because of changes in key factors that determine the adoption of responses both their type and sequence change continuously. For instance, every significant change in absolute and relative prices of main assets forces households to re-examine their responses and adjust accordingly. This is particularly important in war related food crises which are often characterised by great instability and market failures.

Finally, there is the problem associated with differentiating between short term responses to declining entitlements to food, i.e. coping responses, and more permanent responses, namely adapting responses. Davies (1993) points out a conceptual problem in drawing the line between "coping" and "adapting" responses. "Coping" is the short-term response to threats to food entitlements, whereas an "adapting" response is related to permanent changes motivated by the need to alter the way in which food entitlements are acquired. Because of changes in the environment in which rural households live some of the

responses are permanent in nature, involving the restructuring of resources. Adaptive responses may be brought about by new threats and opportunities or increased dependence on market exchange. An example of an adaptive response is the sedentarisation of pastoral households. Using household responses as indicators in famine EWS requires an understanding of and differentiating between short term coping responses and adaptive responses (Davies 1993).

These problems show that using household responses in EWS, which initially appears simple, is rather complex. Consequently, any EWS based on information derived from household response sequences could produce misleading information on the actual situations of households. For example, the sale of small stock, according to Campbell (1990a), would produce the simple message that "there is no problem". Yet this could mean different things depending on a range of factors. It could mean that households have exhausted all other responses and are selling their only remaining assets. Or it could mean that it is the beginning of their response strategy. Although in practice other indicators can be used in conjunction with this information, nonetheless the message derived from this response would be incorrect if it were used in this way.

The responses of rural households in Somaliland in 1988 illustrate the confusion that can be caused by such interpretations of household response

sequences. Faced with the threat of entitlement failure after the outbreak of war, households engaged in a series of responses starting with out-migration and the disposal of one of their most important productive assets - oxen. This was followed by the disposal of camel and cows. Comparing these responses with the standard response sequence would have suggested that households were in a late stage of the famine process in 1988. However, this was not the case, as argued in the preceding chapter. The nutrition survey conducted in the refugee camp, where these households were registered, confirms this point. It shows that in 1988 the situation of households was far better than in the following years. In 1988, 10% of children were found to be malnourished, whereas in 1989, up to 26% were reported to have been severely malnourished. Both 1989 and 1990 were, in fact, the most critical period when famine conditions existed in and around the refugee camps.

8.2.2 Understanding Household Responses

Although monitoring household response sequences alone cannot provide useful information for famine EWS, a greater understanding of why households respond in the way they do can help in interpreting their responses. This means understanding household resource structures and the effects of changes in market exchange and outputs on interrelationships between assets. What types of resources are owned by households and what their relative importance is in

terms of production and income generation are important in understanding responses. So are the interrelationships between resources and the impact of changes in market prices and outputs. When market prices change and outputs fall in food crisis situations the interrelationships between assets owned by households also change. This results from the fact that individual assets are not kept separately but maintained as a mix of enterprises/resources in which changes in one affect the rest. Furthermore, some assets are used as inputs in the production of others required for income generation. Many others still share the same scarce resources. Thus, changes in the prices and outputs an asset affects the remaining resources owned by the household. This in turn affects the likely responses of the household to these changes.

Thus, the first step in understanding household responses is examining how changes in market exchange and production affect their resource organisation. The reasons why households sell some of their assets earlier than others cannot be entirely explained by changes in market conditions. Part of the explanation has to be sought by examining the effect of changes in market exchange on the overall household resource structure. This means examining not only the effect of one asset in isolation, but the total impact on all assets owned by the household. To illustrate these points, the linear programming model developed in the preceding chapter is used to project the effects of changes in prices and outputs on the organisation of resources. Key variables are changed one at a

time and their effects on the total revenue assessed.

Table 8.1 shows the effects of different price and output scenarios on the overall total revenue of the representative household. The table summarises the effects of animal and food price changes on the total net revenue. It shows, for instance, that a 25%[31] fall in the price of small stock and of cows results in 11.6% and 11.4% falls in respective the total net revenues. But a 25% increase in the price of food purchased results in only a 1.2% fall in the total revenue. What this shows is that household revenues are less sensitive to food price changes than to changes in the prices of marketable animals. One reason for this is that unlike the change in prices of, for instance, water and animal feed, food prices do not affect the organisation and interrelationships of household resources. The implication for household response monitoring is that important food consumption adjustments may not take place in the event of increased food prices. The proposition that households reduce the number of meals and the amount of food they consume, which is often described as inevitable, is based on the assumption that households make significant savings by cutting down on their consumption. Yet this analysis shows that changes in food prices do not have much impact on total net revenue, therefore households may not save much by cutting down on their food consumption.

[31] A level of 25% change is used as a basis because at that level changes in individual resources affect the organisation of other resources.

Table 8.1 The Effects of Different Price and Output Scenarios on Household Total Net Revenue

	Scenario	% of Change
1	25% fall of sheep/goat price	-11.6
2	25% fall of calf price	-11.4
3	25% increase in food grain price	-1.2
4	25% fall of crop output	-2.1
5	Total Crop failure	-8.3
6	Loss of 25% of small stock	-12.9
7	Total loss of all small stock	-51.5
8	25% loss of cows	-13.5
9	Total loss of all cows	-53.9
10	25% Loss of animals	-26.3

Source: Survey data, 1992

Similarly, a 25% fall in crop yields reduces the total revenue by only 2.1%, but the same level of fall in the number of small stock and cattle reduces the total

net revenue by 12.9% and 13.5%, respectively. Indeed, even a total crop failure[32] reduces the total net revenue by only 8.3%. This suggests that changes which do not affect animal production, either directly or indirectly, have little impact on total net revenue. However, any change which affects one or more of the productive assets causes a significant impact on revenue and overall resource structure.

8.3 Implications for Famine Relief

A greater understanding of household responses also has implications for famine responses. Understanding responses and the underlying factors helps in identifying the type of interventions required in mitigating the effects of famine on households' livelihood.

In the same way, better understanding of household responses could also help in the timing of relief intervention. Significant delays in responding to impending famines occur mainly because of a lack of sufficient understanding at the conceptual level of the threshold levels beyond which households are forced to take up drastic steps that jeopardize their future livelihood. Moreover, there is also a misunderstanding of what constitutes "abnormal" levels in

[32] When a total crop failure occurs farmers still obtain straw yield which is used to feed animals. Thus, it is assumed the farmer would get straw but no grain yield

interpreting indicators used in famine EWS.

8.3.1 Type of Interventions

Understanding how households re-allocate their resources and how they respond to threats to their livelihood can also shed light on the type of intervention that are most likely to succeed in preserving their way of life. This has the advantage of understanding the most critical constraints facing households and then suggesting the possible effects of intervention. If households are disposing of their animals it may be due to a number of factors such as increasing food prices, falling animal prices, a shortage of water or pasture, increased subsistence requirements or a combination of these. Which factors are the most critical can only be determined by fully understanding the structure of household resources and how they are re-allocated in crisis situations.

This is illustrated by the model described in the preceding section which can suggests the likely effects on household revenues of different interventions or combination of interventions. For instance, it shows that the loss or disposal of animals will have substantial effect on household revenues. If this is caused by a shortage of water or pasture, which can be shown by the by-product data of the model, interventions other than fodder or water aid will not address the underlying cause of the problem. The model also shows that relief food, which

has become the standard intervention in famine situations, can only be suitable in situations where food prices rise exceptionally. But even then its overall effect is unlikely to have any significant impact on households' income, since such households do not spend a large proportion of their income on food.

Instead, relief food may have negative effects on household resources. This results from the fact that households have to commit a significant proportion of their labour to activities relating to the relief programme. At least one member of the family, often the household head, is required to be physically present in the relief camps for most of the time to register and queue for food distribution. Since this occurs during times of peak labour requirement in the crisis situation, households are forced to make decisions on the allocation of labour at a critical period. This is important because time spent on seeking relief has to be withdrawn from household activities. However, in order to make an informed choice on the re-allocation of labour and assess the likely benefits and costs associated with the decision, households require detailed information about the relief programme. They need to know, among other things, the duration of the programme, the amount of food they will receive and the time it will take them to register and queue for daily or weekly rations. Since this information is unavailable, not only to the expected recipients of the relief but also to the relief agencies themselves which do not have definitive plans, households make decisions based on imperfect knowledge with

incomplete or sometimes inaccurate information. Interventions of this nature, therefore, only add to the uncertainties faced by households in such situations.

Rather than preventing the depletion of assets such intervention may encourage the disposal of assets. In the absence of accurate information on the relief operation, households tend to perceive it as a long-term programme, influencing them to favour joining it at the expense of preserving their assets. If the household sends one or two members of the family to a relief camp, their labour has to be withdrawn either from the farm or from tending the animals. As a result, the household may even be forced to sell some of their animals. Thus, instead of helping households to preserve their assets, food intervention may have the negative impact of forcing them to dispose of their animals, thereby causing destitution rather than preventing it.

This partly explains why many households become dependent on relief aid. This dependence does not occur because of the fact that the food distributed is free, but more importantly because households make significant adjustments to their existing way of life to accommodate the requirements of the new way of life as recipients of relief. In this adjustment process farmers and herders become "famine victims". In fact many households who could have coped with the crisis without any intervention are made destitute and dependent on food hand-outs, as a result of the failure of this type of intervention.

In rural Somaliland, the establishment of relief camps in Haud in 1988 created dependence of some households on relief food. Unlike urban families, these rural households had migrated with their animals and some of their other assets. It appears that most of the families would have coped with the crisis without joining the relief camps. However, the distribution of free food influenced them to join, although this involved significant adjustments and re-organisation of resources. As a result some households were forced either to sell their animals or to ask relatives to look after them. Up to 10% of the destitute households interviewed said that they had disposed of the few animals they had because they were not able to look after them while at the same time staying in refugee camps.

8.3.2 The Timing of Relief Intervention

The timing of relief interventions could also be improved by a greater understanding of the effects on household resources of changes to key variables. Examining the responses to possible changes in market exchange and outputs helps to identify the threshold levels beyond which households are forced to take actions that seriously jeopardize their future livelihoods. Such threshold levels can be identified by projecting the effects of different scenarios on household resources as shown in Table 8.1. For instance, although some changes such as increases in food prices or a significant fall in crop output

reduce the total net revenue by less than 5%, the same level of fall in animal prices reduces the total revenue by as much as one-fourth. It follows then that if more than a 10% fall in total net revenue is considered to be critical, then a 25% fall in animal prices could be used as a threshold level to trigger action. A similar example is the price of water which if it reaches a certain level makes it unviable for households to keep animals. In this case an increase in the price of water by more than 5 times (which can occur in some drought situations) forces the household to dispose of all its animals.

If these critical threshold levels of key variables are identified in advance then intervention could be made more timely in such a way that they can be triggered when a variable reaches that particular level. This also helps in understanding and predicting the stage at which households are no longer able to cope without outside intervention. It is through these means that the failure of household coping strategies in crisis situations can be better anticipated and responded to more effectively.

These threshold levels can also provide more specific information than the arbitrary levels of indicators currently used in explaining the presence of famine. Ambiguity often arises because of the use of terms such as "abnormal" and "exceptionally high" used in describing levels of indicators. Without a bench mark to compare these estimates, their description as "normal" or

"abnormal" is highly subjective and dependent on the value judgement of the researcher. For example, while in some famine EW assessments an increase in food prices of about 100% is considered as "abnormal", in others it is considered as "normal". Thus, what constitutes an unacceptable level of an indicator varies from one assessment to another.

Identifying threshold levels is also in line with the recent emphasis on contingency planning and preparedness in famine prone areas. Failure of timely response to impending famines in many African countries has been attributed to a lack of pre-planned response systems. However, drawing up a pre-planned measure of responses that can be automatically implemented in times of crises requires a prior identification of levels of EW indicators that can be used to activate the response system. It is only when these threshold levels of key variables are identified in advance that a pre-arranged intervention can be triggered automatically. The advantage of this is that there is no need for major new decisions to be made by the authorities concerned in triggering a response, thus proving that the "natural bureaucratic inertia operates in favour of pre-planned actions (Swift and Gray 1989: 52)".

8.4 Conclusions

This chapter has explored how greater understanding of household responses can also help in EWS and famine intervention. While the concept of using household response sequences in EWS is rejected for misdiagnosing crisis situations, it is argued that understanding interrelationships between household resources and the likely effects of changes in market conditions on its resource allocation can provide vital information which can help in interpreting responses with greater accuracy. When relative market prices change and outputs fall in crisis situations the interrelationships between household assets change. This results from the fact that they are not kept separately but as a mix of resource in which changes in one affect the rest. The projections based on the linear programming model show how different changes affect the allocation of resource and overall household total net revenue.

A greater understanding of the underlying factors affecting household responses could also help in identifying the type of interventions that are most likely to succeed in mitigating the effects of famine on household livelihoods. Moreover, it can help in the timing of relief interventions. Significant delays in responding to impending food crises occur mainly because of a lack of sufficient understanding of what constitutes an "abnormal" levels of indicators. Prior identification of threshold levels beyond which households are forced to take drastic actions that seriously jeopardize the future viability of their resources can be used as a basis for setting up a pre-planned interventions that can be

automatically triggered if and when these levels are reached.

CHAPTER 9 SUMMARY AND CONCLUSIONS

9.1 Introduction

This thesis has examined the responses adopted by households in rural Somaliland to changes in their resource endowments and market exchange during the 1988-92 food crisis. This chapter summarises the main findings of the thesis and the implications for policy and future research.

9.2 Summary of the Main Findings

Despite the recurrence of famine in Africa there is still a lack of proper understanding as to how rural households respond to food insecurity and famine situations. A growing literature on household coping strategies has not helped either in understanding how rural households respond to food crisis, what determines their responses and how they manage their resources in crisis situations. Many of these studies are based on simplistic generalisations and poorly conceptualized models which attempt to define a particular sequence of responses.

The research questions put forward in this thesis are (1) Is there a predictable pattern of responses followed by rural households when faced with declining

entitlements to food? (2) What determines the sequence of household responses? (3) How do rural households manage their resources during crises? (4) What are the implications for famine early warning system and famine relief?

This thesis is based on the premise that a greater understanding of household responses requires closer examinations of market conditions and household resource endowments. In this context the following hypotheses are advanced: (1) there is a predictable sequence of responses adopted by rural households faced with food insecurity and famine conditions; (2) a better understanding of market conditions and household resource management is required to understand the underlying factors of household responses. These hypotheses are tested using empirical data obtained from the Gabiley district in rural Somaliland in two surveys conducted before and after the crisis. This area was selected because of the availability of survey data collected just before the outbreak of the 1988 war and because of the researcher's extensive experience in the area which made it possible to obtain good quality data. The information obtained provided an in-depth understanding of the rural households.

The analysis presented in the thesis rejected the hypothesis that there is a predictable sequence of responses adopted by rural households in food crisis situations. It is argued that the "reversibility" and the "domestic resource

commitments" criteria claimed to determine the sequence of responses fail to take into account important factors such as market conditions which influence the order in which responses are taken up and are, therefore, insufficient in explaining household responses. Perhaps the most important factor in determining the order in which the animals were disposed of in rural Somaliland was the relative prices of animals. Significant shifts in the relative prices of animals during the five year period was mainly responsible for the order in which the animals were disposed of. Other important factors such as household resource organisation and management which determine the sequence of responses in crisis situations are also examined.

The long-term adaptive and coping strategies developed by the rural households have also been examined by reviewing the droughts and famines in Somaliland from the late 19th century to 1987. The strategies adopted include diversified herd composition, split-herding, migratory movements, increased market exchange, a range of redistributive systems, and sending family members to urban towns to send back remittances. Some of the adaptive strategies adopted by the pastoralists included sedentarisation. These strategies have largely been successful in mitigating the effects of droughts and famines and preventing widespread starvation in most crises. Free trade and integration into the world markets permitted pastoralists to adopt more effective responses in terms of providing a relatively stable market and employment opportunities not only

inside the country but also in neighbouring countries.

The thesis also argues that government policies and interventions, most notably the banning of *Qat* cultivation and the adoption of pricing policy which penalized rural producers, have contributed to the vulnerability of the rural households. The failure of the development programme aimed at offsetting these effects also further undermined the ability of households to cope with food crises. Thus, the 1988 war and the subsequent crisis occurred at a critical time when rural households were more vulnerable than ever before. Consequently, the war had a devastating impact with far reaching economic and social consequences on the households.

While the concept of using response sequences as indicators in EWS is rejected, it is argued that a greater understanding of market prices and household resource management can provide useful information for famine early warning and famine response. It is argued that if the underlying factors of responses are fully understood they can help in identifying the type of interventions most likely to succeed in mitigating the effects of famine on households' livelihoods. In the same way, they could also help in the timing of relief interventions. Significant delays occur because of a lack of sufficient understanding of threshold levels beyond which households are forced to take drastic actions that seriously jeopardize the future of their livelihoods. It is

suggested that the delays can be prevented by prior identification of these threshold levels.

9.3 Implications for Policy

Several policy implication can be drawn from this thesis. First, the results of the thesis caution against the use of household response sequences in EWS. The concept is not as simple as it appears initially. A greater understanding of a range of factors including market conditions, household resource structure and allocation, and the underlying factors of the responses is required in order to incorporate household responses into EWS. These factors which determine the order in which the responses are adopted show that it is impossible to generalise from responses observed in one area at a particular time.

Second, the increased recurrence of droughts and famines calls for better preparedness for future crises. What is needed is a pre-planned measure of responses that can be triggered automatically in times of crises. This entails a public commitment to respond to impending crisis and undertake appropriate interventions. Perhaps lessons could be learnt from the famine preparedness and intervention programmes of the colonial administration. Moreover, a greater attention needs to be paid to the appropriateness and timing of interventions aimed at containing entitlement failures.

Third, this study also suggests improving the exchange of information between donors and the potential or the actual recipients of relief aid. When households are faced with declining entitlements, they have to plan and make decisions on how to respond to the crisis and protect their livelihoods. In this decision-making they need, among other things, information on the type, timing and duration of the relief programme so as to make informed decisions concerning the responses to the crisis. Lack of this vital information means that households make decisions based on imperfect knowledge with incomplete or sometimes inaccurate information. Thus, interventions of this nature, only add to the uncertainties faced by households in such situations.

Finally, there is a need for a closer link between relief and development aid. This means re-designing both emergency relief and development aid. Relief aid should not only be confined to containing the crisis, but should also be concerned with making sure that victims are better able to handle future crisis. In this way not only the immediate survival of the communities will be addressed, but also the medium and long-term development needs beyond the crisis. In the same way, development programmes should also be designed to make them more flexible in addressing both the long-term development requirements and the short-term needs of the communities concerned. In view of this, relief and development should not be seen as alternative approaches, but closely related interventions aimed at both the short and medium to long-term

needs. I believe that the alleged dilemma between relief and development is an exaggerated one based on the misconception that there is a dividing line between the two. What is needed in the light of the recurrent and increasing number of emergencies is the development of positive links between relief and development aid.

9.4 Implications for Future Research

Further research into the performance of markets in conflict and crisis situations and how they affect the responses and coping strategies of households is required. Although markets become more central to the survival of rural households during food crisis, very little in known about how their performance influences household decision-making in crisis situations or how they respond to relief interventions given the lack of central authority to regulate their functioning.

This thesis has highlighted the importance of social networks and collective insurance systems and their role in mitigating the effects of famines. However, these systems have been weakened by prolonged conflicts and increased recurrence of droughts and famines. Further investigations are needed into the long-term viability of these systems and how they can be supported.

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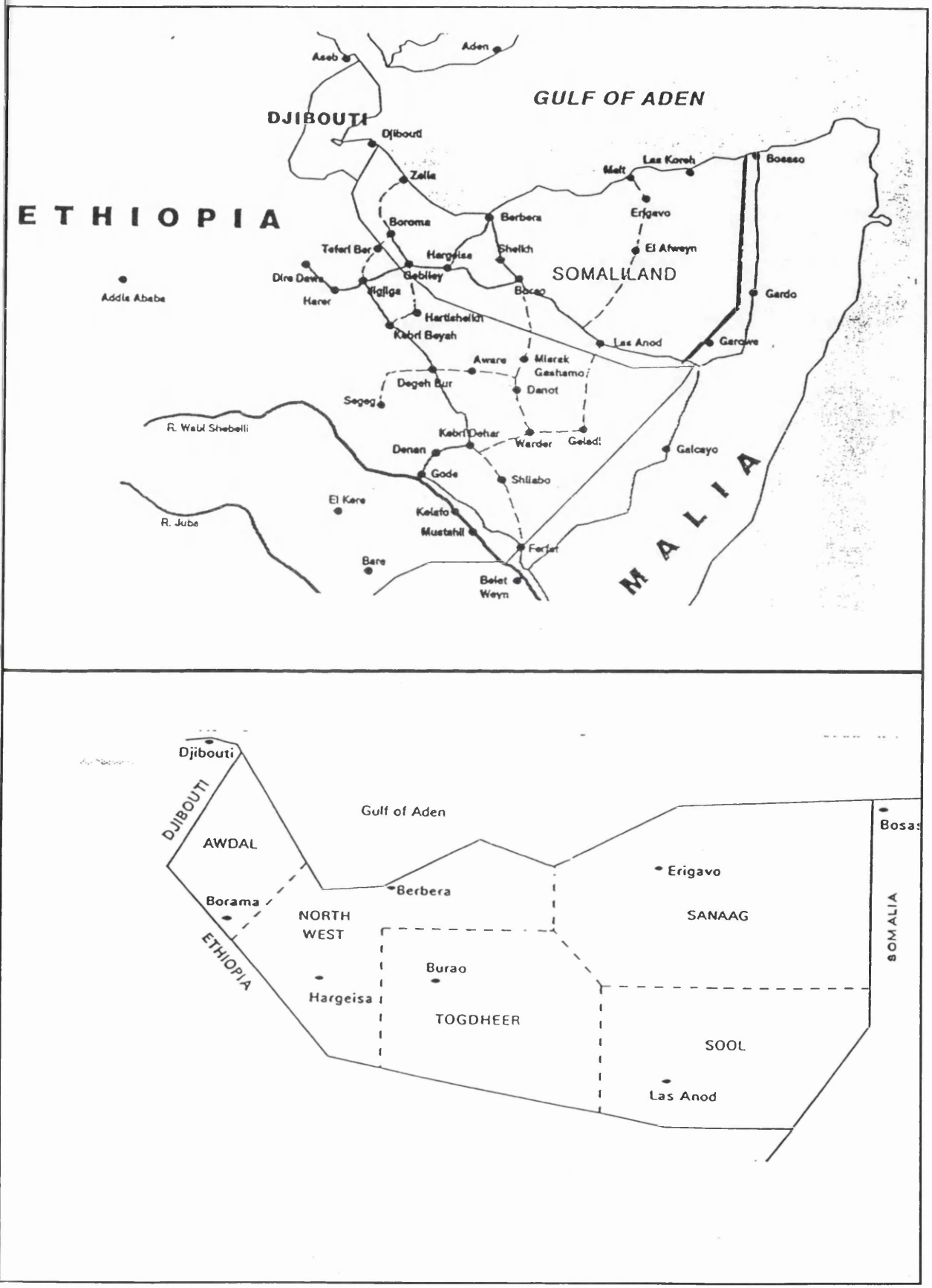
Appendix 3.1 Somaliland



Appensdix 3.2 Survey Questionnaire

1. REGISTRATION

Village..... Enumerator.....

Sub-village.....

Reer.....

Respondent's Name .....

Respondent's Main Occupation .....

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2. HOUSEHOLD DETAILS

Age of the respondent	[_____] years
Are you the head of the family?	[_____] yes/no
If no, what is your relationship within the household?	[_____]
Do you have more than one family?	[_____] yes/no
If yes, how many families in total	[_____]
What is the size of the family?	[_____]
No of males over 15 yrs	[_____]
No of females over 15 yrs	[_____]
No of children under 15 yrs	[_____]

3. LIVESTOCK AND ASSET OWNERSHIP

3.1 1992

Type of Livestock	No.	No. Born	No. Died	No Sold	No Bought	Price/ Head (sh)	Total Value	Date/Month Market

3.2 1991

Type of Livestock	No.	No. Born	No. Died	No Sold	No Bought	Price/ Head (sh)	Total Value	Date/Month Market

3.3 1990

Type of Livestock	No.	No. Born	No. Died	No Sold	No Bought	Price/ Head (sh)	Total Value	Date/Month Market

3.4 1989

Type of Livestock	No.	No. Born	No. Died	No Sold	No Bought	Price/ Head (sh)	Total Value	Date/Month Market

3.5 1988

Type of Livestock	No.	No. Born	No. Died	No Sold	No Bought	Price/ Head (sh)	Total Value	Date/Month Market

4. Household Assets

Do you own any landholding [____] yes/no

If yes, No of *Qoodis* [____]

How many of the following items do you own?

Item	No
Tractor	....
Truck/Van	....
Local Plough	....
Radio	....
Aqal Somali	....
Dergad	....
Caws (xidhmo)	....
Berkad	....
Rifle	....
.....	....
.....	....

5. SALE OF ASSETS

Type of Asset	No	Price	Buyer	Date/Month	Market
_____	___	_____	_____	_____	___
_____	___	_____	_____	_____	___
_____	___	_____	_____	_____	___
_____	___	_____	_____	_____	___
_____	___	_____	_____	_____	___

6. FOOD CONSUMPTION AND EXPENDITURES

Food Item	Unit	Number	Expenditure	Period

7. OTHER SOURCES OF INCOME

No. of family members employed [_____] Total Income [_____]

Type of the Crop	Area (Qodis)	Expected Output	Source of the Seed

No of milking animals:

Sheep _____

Goats _____

Cows _____

Camels _____

Do you sell any produce? [_____] yes/no

If yes, how much/many of the following do you sell per week/month?

Produce	Unit	Qty	Price/unit	Total Amount	Remarks
Milk	____	_____	_____	_____	_____
Ghee	____	_____	_____	_____	_____
Hides	____	_____	_____	_____	_____
Skins	____	_____	_____	_____	_____

8. REMITTANCE, AID AND OTHER ASSISTANCE

Is any member of your family living or working abroad? [_____] yes/no

If yes, what is the relationship? [_____]

Where does s/he live? [_____]

How much money did s/he send you for the last 12 months? [_____]

Do you receive food from the refugee camps [_____] yes/no

If yes, how many members of your family are registered? [_____]

9. BLOOD MONEY, COMPENSATIONS, CONTRIBUTIONS, ZAKAAT AND OTHER PAYMENTS

Type of Payment	Amounts Paid	Amounts Due	Remarks

10. KAT CULTIVATION

How many Kat fields do you own? [_____]

FIELD NO.	YEAR OF PLANTING	NO OF PLANTS	TOTAL COST	NO OF CUTTINGS IN 1992	TOTAL VALUE
___	_____	_____	_____	_____	_____
___	_____	_____	_____	_____	_____
___	_____	_____	_____	_____	_____
___	_____	_____	_____	_____	_____
___	_____	_____	_____	_____	_____
___	_____	_____	_____	_____	_____

Comment

Appendix 5.1 Official and Parallel Market Exchange Rates, 1973-1987 (So Sh per $)

Period	Official Rate	Parallel Market Rate
1973-77	6.3	6.3-7.0
1978 - 30/6/81	6.3	7-16
1/7/81 - 30/6/82	6.3-12.59	16-24
1/7/82 - 22/10/83	15.23	24-50
23/10/83 - 14/9/84	17.35	50-95
15/9/84 - 31/12/84	26.00	95-105
1/1/85 - mid 85	36.00	105-120
July 1985	88.00	120
May 1987	135.00	155

Source: Jamal (1988)

Appendix 7.1 Shortened Version of the Linear Programming Matrix.

				Small stock	Cows	Sorghum	Maize	Sorghum_Legume	Water	Sell Straw	Buy Straw	Oxen	Small stock Labour	Cattle Labour	Sell Yearling	Sell Lamb	Buy Sorghum
				head	head	ha	ha	ha	200 litres	ton	ton	pair	No	No	head	head	kg
				240	1300	0	0	0	-45	6	-8				35000	5000	-20
Cultivated Land	ha	5	>			1	1	1									
Water	2001 t	0	>	1	12				-1			24					
Straw tie	ton	0	>		1	-1.15	-0.3	-1.15		1	-1	2					
Oxen	Weeks	0	>			2	2	2				-30					
Small stock labour	Head	0	>	1									-100				
Small stock labour supply	No	1	>										1				
Cattle labour	Head	0	>		1									-50			
Cattle labour supply	No	1	>											1			
Yearling	head	0	>		-0.12										1		
Small stock	head	50	>	1													
Cows	head	20	>		1												
Lamb	head	0	>	-0.34												1	
April labour	days	62	>			10	10	15					-30				
May labour	days	62	>			10	10	15									
June labour	days	62	>			15	15	15									
July labour	days	62	>			15	25	15									
August labour	days	62	>			10		10									
September labour	days	62	>			30		30									
October labour	days	62	>			30		30									
November labour	days	62	>			10		10									
Oxen	pair	1	=									1					
Minimum subsistence	kgs	1200	<			230	200	250									1